THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

National Oil Show, Sherman Hotel, Chicago, Jan. 19 to 25.

Independent Oil Men's Association of New England, American House, Boston, Mass., Jan. 22, 23, 24.

Oklahoma Oil Jobbers Association, Huckins Hotel, Oklahoma City, Jan. 23, 24.

Wisconsin Petroleum Association, Hotel Pfister, Milwaukee, Jan. 28, 29.

Iowa Petroleum Association, Fort Des Moines Hotel, Des Moines, Ia., Feb. 11, 12.

Ohio Petroleum Marketers Association, Deshler-Wallick Hotel, Columbus, O., Feb. 19, 20, 21.

Western Petroleum Refiners Association, Shreveport, La., March 10, 12.

Michigan Oil Men's Association, Statler Hotel, Detroit, March 19, 20, 21.

American Association of Petroleum Geologists, Roosevelt Hotel, New Orleans, La., March 20, 21 and 22.

American Oil Burner Association and National Oil Burner Show, Hotel Stevens, Chicago, April 7 to 12.

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Photo by Blank-Stoller, Inc.

WILLIAM M. IRISH, elected vice president of the American Petroleum Institute for refining at the annual meeting at Chicago, is a practical refiner with 40 years experience.

As chairman of the Institute's division of refining he will have a sympathetic knowledge of the problems of the plant superintendent and technologist as well as those of the executive.

Like many of the men who have reached high positions in our industry Mr. Irish grew up in the Pennsylvania oil fields, where his father was one of the pioneer refiners.

After his graduation with a degree of Bachelor of Science in Chemistry from Cornell in 1890, Mr. Irish spent a few months with the Acme Oil Co. at Olean, N. Y., and then went with the Solar Refining Co. at Lima, Ohio, as assistant superintendent, from which he was promoted to superintendent.

In 1903 he was called to Philadelphia as assistant general manager of the Atlantic Refining Co. In 1905 he was made a director, in 1911 secretary and in 1915 vice president and general manager. He was elevated to the presidency of the company, the position he now holds, in 1927.

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No Increase in Compression Ratios Looked for During 1930

By Arch L. Foster
N. P. N. STAFF WRITER

DETROIT, Dec. 21

AUTOMOBILE engine designers do not look for increases in compression ratios next year, and probably not for some time to come, a visit at several plants here brings out.

Ratios may be boosted slightly by different manufacturers as improvements are made in engine and fuels, but no general stepping up of the ratio is expected in 1930.

In fact, recent experience in raising the compression of gasoline engines has resulted in "backstepping" slightly, due to the difficulties encountered by reason of the fuels and lubricants not being suited to satisfactory operation in such motors.

Factors of engine design, as well as the securing of suitable fuels, are involved in the raising of the general compression ratio at which motor cars are operated.

Extensive research laboratories at the automobile plants here are working on problems of design, as well as those of fuel and lubrication. Few chemists and engineers in the oil industry, it is likely, have any definite idea of the extent of research programs on even motor fuels and lubricants carried on at these plants.

These research programs on motor gasoline and lubricants have to do largely with the performance of these oil industry products in automobile engines, while the oil industry's research may be said to have to do principally with problems arising in their manufacture.

With regard to lubricating oils the research engineers and chemists here at Detroit and at automobile factories elsewhere are working on apparatus for the more exact determination of relative lubricating efficiencies of motor oils and greases. Along this line it appears likely that, within a few months, a new apparatus for this work, employing the method of determining the lubricating coefficient by using dynamometer methods, may be announced.

Studies are also being made on the noise-deadening properties of various heavy and semi-fluid lubricants by the use of sound recording apparatus of the dictaphone type, to the end of eliminating transmission and gear case noises.

With regard to motor fuels the research work is along the direct line of standardization of knock testing methods and means for the elimination of gum formation, made necessary through the increased gum forming tendencies of the higher anti knock gasolines.

While the motor car manufacturers will not yet announce any details in connection with their new models for next year, at every plant visited the definite statement was made that compression ratios would remain essentially the same as in previous models.

According to the manufacturers, the main factors limiting the compression ratios that may be successfully employed in engine design are cylinder head and piston head design, ignition system design, and the detonation properties of motor fuels. Developments along these lines must go hand in hand.

In cylinder head design and its effect on detonation, as well as other phases of the problem the researches of Ricardo and his associates are classic. It has been found that the placing of the valves in two rows, on opposite sides of the engine head, instead of in one row, has a material effect on the behavior of the motor.

The shape of the cylinder and piston heads has been widely studied with respect to the influence of these factors on power output and detonation tendencies, and work on these lines is being carried on very extensively.

The design of the spark plug and its position in the head also influence to a large degree the efficiency of the motor. One executive has stated that, in his opinion, the greatest need of the automobile industry is a plug that is universally adaptable to, and suitable for, all kinds of driving conditions by all types of drivers, good, bad and indifferent.

Such a plug is not at present in existence, and it appears doubtful that a really universal type could be designed. This has not deterred this manufacturer, however, from relentlessly pursuing the problem of ignition improvement, with a creditable degree of success. The practical solution of the proper compression ratio problem doubtless lies in the direction of better understanding of the relationship between motor design and ignition system, fuel characteristics,

and the operating conditions which are to be met.

The most pressing problem occupying the attention of both motor builder and motor fuel manufacturer at present is probably that of formulating a dependable universal method for the determination of detonation properties of gasoline. Numerous methods are now in use by different laboratories which give good results, but results obtained by one investigator are seldom intelligible to another, due to the lack of a common basis of comparison.

These existing methods have been divided roughly into five general classifications, the bouncing pin, where degree of detonation is determined by electrolysis; variable spark, determining the advance at the point of detonation; variable compression, determining either the compression ratio or the maximum power output when detonation interferes with smooth operation; and various combinations of these methods, including a listening or oral device for knock detection and estimation.

Dr. G. G. Brown of the University of Michigan determines maximum power output. Hill of the Atlantic Refining Co. also uses essentially the same yard stick. The Bureau of Standards has developed a method of knock detection by listening, producing detonating conditions by changing the throttle setting. Boyd, of General Motors, uses both the Midgeley bouncing pin and sound detection. The Ethyl Gasoline Corp. has standardized on a water-cooled engine using the bouncing pin, and employs a synchronous motor to obtain more constant engine speed, a very important factor in that method.

Since the results of none of these methods are easily interpretable in terms of the others, concerted effort is being made to work out a standard method to be used by all laboratories. The problem resolves itself into the standardization of three factors, the engine design, the standard test or reference fuel with which all fuels are compared, and the method of operation of the test.

The new Waukesha motor has been installed in eight cooperating laboratories, and preliminary work is now being planned by the members of the committee, looking toward the determination of standard routine testing conditions to be employed which will facilitate obtaining results that are reproducible in any laboratory by different operators. The adoption of a standard reference fuel will possibly be postponed until the engine design and operating method are fairly well agreed upon.

Refiners appear to be concentrating their attention on two closely related phases of the fuel problem. Remarkable improvement in the detonation characteristics of commerial gasolines by cracking, both in liquid and in vapor phase processes, has been made, and the average "benzol equivalent" of the motor fuels now on the market has been increased considerably. Better chemical treating methods have also contributed largely to this result.

It has been found, however, that many of these new anti-knocking fuels show the formation of troublesome, sometimes prohibitive, amounts of gum in use, but particularly on standing in storage. Investigation has proved that a close relationship exists between the knocking tendency and the gum formation property of a fuel, and that as gum is formed the anti-detonation value of the fuel is correspondingly lowered. Fuels showing a high anti-knock rating, when freshly made, have had this rating reduced to practically zero on standing through the formation of large amounts of gum.

Several investigators are carrying out intensive studies of the cause of this trouble and methods of preventing the formation of gum and the loss of knock value and color. Indications are that the nature of cracking stock, cracking conditions, chemical treatment of pressure distillate and conditions of storage and use of the finished gasoline all influence these properties, and that more complete information regarding the effect of these factors on gum and knock properties will go far toward reaching a satisfactory solution of the difficulties. Recently considerable attention has been given to the study of the use of chemicals as gum inhibitors. Other laboratories are pushing studies on different phases of the problem of preventing gum and increasing knock properties and important advances in this direction may reasonably be expected without too long delay.

Arch L. Foster

New N. P. N. Staff Writer Of Refining News

The author of the accompanying article is the newest member of NATIONAL PETROLEUM NEWS editorial staff. He will devote his attention to news and technical developments having to do with refining and natural gasoline manufacturing.

Until within two months ago Mr. Foster was a member of the technical staff of the Bureau of Mines at Washington working on refining problems. He is a chemical engineer by training and, in addition, has had several years practical refining and research experience in the oil industry.

Cadillac Will Build 16-Cylinder Car

DETROIT, Dec. 20—A new car equipped with a 16-cylinder, 45 degree, V-type motor is announced by the Cadillac Motor Car Co.

The new engine is the result of several years of research by that company, and is apparently an elaboration of the principle of the eight-cylinder motor design which has become so well known. When fully equipped for the road the new power plant will show a rating of 165 to 175 brake horsepower. The "throws" of the five-bearing crankshaft are set in two planes at 90 degrees, and the shaft is balanced by compensating weights.

The overhead valve system is said to be rendered practically noiseless throughout the life of the engine under any conditions by a new automatic valve silencing apparatus, which is an integral part of the valve operating mechanism and by which the clearance between tappet and stem is eliminated. This silencing arrangement is lubricated continuously by oil direct from the purifying filter on the engine. Valves are operated by a single camshaft.

The Cadillac thermostatic carburetor of the single jet type is used, and the lubricating system is full pressure feed to all bearing surfaces. Wrist pins are lubricated through oil leads drilled the length of the piston rods.

The engine is provided with an oil filter for purifying the crank case oil, as well as a ventilating system for the removal of the products of combustion and the fuel vapors from the crank case. In addition a filtering screen covers the entire lower crank case to prevent heavy foreign matter from entering the lubricating system. Five-point suspension with rubber mountings is employed. The new car will be offered in 30 or 35 body styles, all custom built.

Santa Claus Makes Headquarters At California Shell Stations

Staff Special

LOS ANGELES, Dec. 19

SANTA CLAUS is getting a royal welcome on the west coast this year at service stations of the Shell Oil Co. of California. He will find unique outdoor displays at Shell stations in San Francisco, Los Angeles, Oakland, Portland, Salt Lake City, Ogden, Honolulu, and at Victoria and Vancouver in British Columbia.

More than $100,000 has been spent by the company in erecting these displays, which in many communities are looked forward to as a regular feature of the season. Candy and balloons are given to the youngsters.

At the company's station at Fell and Baker St., San Francisco, where a large area affords ample space, a talking, moving Santa Claus 35 feet high is featured. The huge figure is seated on a throne and has a fairyland setting as a background, 200 feet long and 65 feet high, and containing more than 50 moving figures.

An ingenious arrangement of microphones, hidden at strategic points around the station, catch the slightest word uttered by the crowd, and carries it to an operator hidden inside the figure of Santa.

During the excitement a youngster whispers, "Oh, daddy, I wish Santa would bring me a doll and buggy." The microphones pick up the message, unknown to the child, and the hidden operator works accordingly.

"Well, well, well," says Santa wagging his head and winking his eye. "There's a little girl who wants a doll and buggy for Christmas. We'll just have to write that down in the book and see what can be done."

Whereupon Santa's arm goes through all the motions of writing in a big book lying on his knees, much to the delight of the assembled children.

Something more than anticipation of forthcoming presents was available for the youngsters as over 210,000 balloons and 125,000 boxes of candy were distributed among the children who visited the display, and it was estimated that a daily average of nearly 5000 persons attended the exhibit during the first week.

The display was unveiled Dec. 7 and throughout the day and evening the station was overflowed with men, women and children. A steady stream of automobiles filled the streets leading to the service station and six police officers were needed to care for the traffic.

That the project was a paying proposition was evidenced from the start. Gasoline sales soared from a daily average of 1000 gallons to better than 10,000 gallons. This compares favorably with the peak day of the 1928 display when 8500 barrels were sold.

In Salt Lake City the company's display features a reproduction of Mt. Lassen, measuring 135 feet long and 32 feet high. To make the picture realistic, steam and fire poured from the erupting volcano. Colored lights played on the set at night adding a weird beauty. The foreground was covered with real trees, in the center of which stood Santa's log cabin. A live Santa held sway here and distributed candy and balloons to his youthful visitors.

The Wasatch mountains provided the setting for the display at Ogden, Utah. In general, however, the details in that city were similar to those at Salt Lake City.

The displays at the other cities, while less elaborate than the three mentioned above, helped to get the motoring public into a holiday frame of mind with a consequent increase in the sales of gasoline and lubricating oils.

Santa Claus visiting a Shell station in San Francisco. Santa can hear what the crowd says, can write in his book, and can talk to his visitors

Ohio Producers Seek Early End To Penn Grade Differential

LOGAN, Dec. 20

PRODUCERS of southeastern Ohio are laying plans to have removed the 20-cent differential they receive for their Pennsylvania grade crude, under the price paid West Virginia producers for their Pennsylvania crude.

The differential is a sore spot in the southeastern Ohio oil fields. Ohio producers say their crude tests just the same as the Pennsylvania grade oil which lies across the Ohio river or across the Pennsylavnia state line.

At times efforts have been made to have a refinery built in southeastern Ohio for running the Pennsylvania grade crude produced in the area and a movement for a plant is underway now.

Relief from the differential will be sought soon after Jan. 1 by a committee of the Southeastern Ohio Oil & Gas Producers' Association which will call on L. W. Young, Jr., president of the South Penn Oil Co., in Pittsburgh. Mr. Young's company is the principal buyer of the southeastern Ohio crude and posts the price through the Joseph Seep Purchasing Agency. Members of the committee are: E. J. Mildren, Marietta, 1930 president of the producers' association; O. C. Dunn, Marietta, 1929 president of the association; H. D. Atha, Logan, and A. E. Faine, New Straitsville.

The producers point out that they are being punished now for a condition for which they were not responsible but which led to the establishment of a differential several years ago. This condition was the running of oil from a few Berea sand wells into the lines which were carrying the Pennsylvania grade, or Clinton sand, oil. The Buckeye Pipe Line Co. since cleaned its lines and the heavy oil contamination no longer exists, the producers say.

The haul to the western Pennsylvania refineries is just as short as the haul from West Virginia and shorter than part of the West Virginia haul, they point out.

The Logan Chamber of Commerce has already set aside $10,000 for the purchase of a site for a refinery in case any Independent refiner or any other responsible group wishes to build a plant at that city.

The chamber has for its president Barton A. Holl, a producer and one of the directors of the Ohio association. Mr. Holl has been active in working for a plant in the territory and said he had been assured by an Independent refining company that it would put up a 1500-barrel complete plant if producers will assure the refinery at least a five-year crude oil supply.

The refiner, Mr. Holl told the association meeting here, would pay the price posted for Pennsylvania grade crude in West Virginia plus 10 cents premium a barrel, but that contracts for the crude were wanted before the refiner was willing to make a large investment in a plant.

It is proposed that the plant should be modern, running the crude down to cylinder stocks from which bright stocks would be made, and cracking the gas oil.

Mr. Faine told of experiments with various solvents for wax in wells and said he and an Ohio university professor had reached the conclusion hot oil is the best solvent for paraffin and hot water was the best solvent for salt. He said that hot oil run into a shot hole will greatly increase the production of the well without the great expense of reshooting.

The association will seek to obtain a uniform method of figuring lease valuation for taxation purposes. At present each county auditor figures the valuation at a different figure, and taxable values now run from $1000 to $1800 per barrel per day.

The association will also strive to have retained the present method of figuring depletion for income tax purposes. It was reported a change was contemplated by the federal government.

Mr. Dunn told about a recent visit to the Oklahoma City pool and the American Petroleum Institute meeting at Chicago.

The association re-elected for 1930 all its 1929 directors. These men are: A. D. Hufford, Bremen; H. D. Atha and B. A. Holl, Logan; W. E. Burns, O. C. Dunn, H. B. Goddard, and E. J. Mildren, Marietta; A. E. Faine, New Straitsville; F. W. Douglass, Woodsfield, and H. E. Sewart, Columbus. The directors elected Mr. Mildren president; Mr. Douglass and Mr. Goddard vice presidents, and W. L. Franks, Logan, secretary-treasurer.

The following committee chairmen were appointed: marketing, Mr. Atha; legislative, Mr. Faine; membership, Mr. Holl; production, Fred N. Stover, New Matamoras; taxation, O. D. McPheron, Marietta, and publicity, Mr. Franks.

Run All Crude to U. S. Account, Is Pennsylvania Man's Plan

LOGAN, O., Dec. 20

RUNNING all crude oil to government account or to a bureau similar to the new federal farm board or the federal reserve bank board, and letting refiners buy their crude oil supplies from that agency, was suggested as a means of preventing crude oil overproduction by A. H. Squier, Reno, Pa.. at a meeting of the Southwestern Ohio Oil & Gas Producers' Association here last night.

Mr. Squier recommended that the idea be approved by the association by adoption of a resolution but after O. C. Dunn, Marietta, O., president of the association, said the idea was so new and revolutionary and should receive further study because the association should act on it, the scheme was referred to the association's board of directors.

Mr. Squier asserted that the oil producers were in the same economic straits as the farmers and that it would not be unbecoming for some governmental agency to exercise some control over the producing division of the industry.

The Standard Oil Co. of New Jersey has recently advocated government control of production because a gambling element had gone in so strongly for production, asserted Mr. Squier who is a producer in both Pennsylvania and Ohio fields.

Mr. Squier said he did not want to tear down any structure in the oil industry but urged that the Ohio oil men go on record as favoring the running of crude oil to government account.

"Under that system," Mr. Squier said, "if there was overproduction anywhere the government would soon be able to see it. It would then be in position to say to the overproducers, 'Hold on there, you are going too fast.' The government would be in position to stop overproduction."

Mr. Squier said he had not worked out details for any plan but in general the government would have to take the oversupply of oil off the market just as the federal farm board is to take the oversupply of farm crops off the market. The government, it is his general idea, would have a fund, which might be called a revolving fund, from which the producers would be paid for their crude oil when it is run to the government tanks, and which would be replenished by refiners when they bought their supplies of crude.

Voshell Pool Holds Much of Interest In Size and Geologic Section

By William F. Lowe
N. P. N. STAFF WRITER

TULSA, Dec. 21

THE Voshell pool in McPherson county, Kansas, infant producing area of that state, is fast assuming adult importance. Not only is it giving evidence of a size comparable with some older major pools, but it is introducing some new pay horizons to the state. The latter have been the cause of considerable speculation and argument among geologists.

With only four wells producing from the lower pay at the present time, the pool has a potential of around 8500 barrels per day. A fifth, and by an odd chance it is the discovery well, is thought to be getting its production from an upper horizon and not from the lower pay.

Two strings of tools and some 200 feet of 6-inch casing lost in the hole seems to have effectually plugged off the oil at the bottom. The well is making about 35 barrels a day from a limestone topped at 3268 feet. The total depth is 3301 feet.

That the pool is to be of major proportions, at least as far as areal extent is concerned, is no longer a question of doubt. The early core drilling of the Shell Petroleum Corp., and the Gypsy Oil Co., indicated a structure of no mean size but it was not until the first wells were drilled that the field's potential could even be guessed.

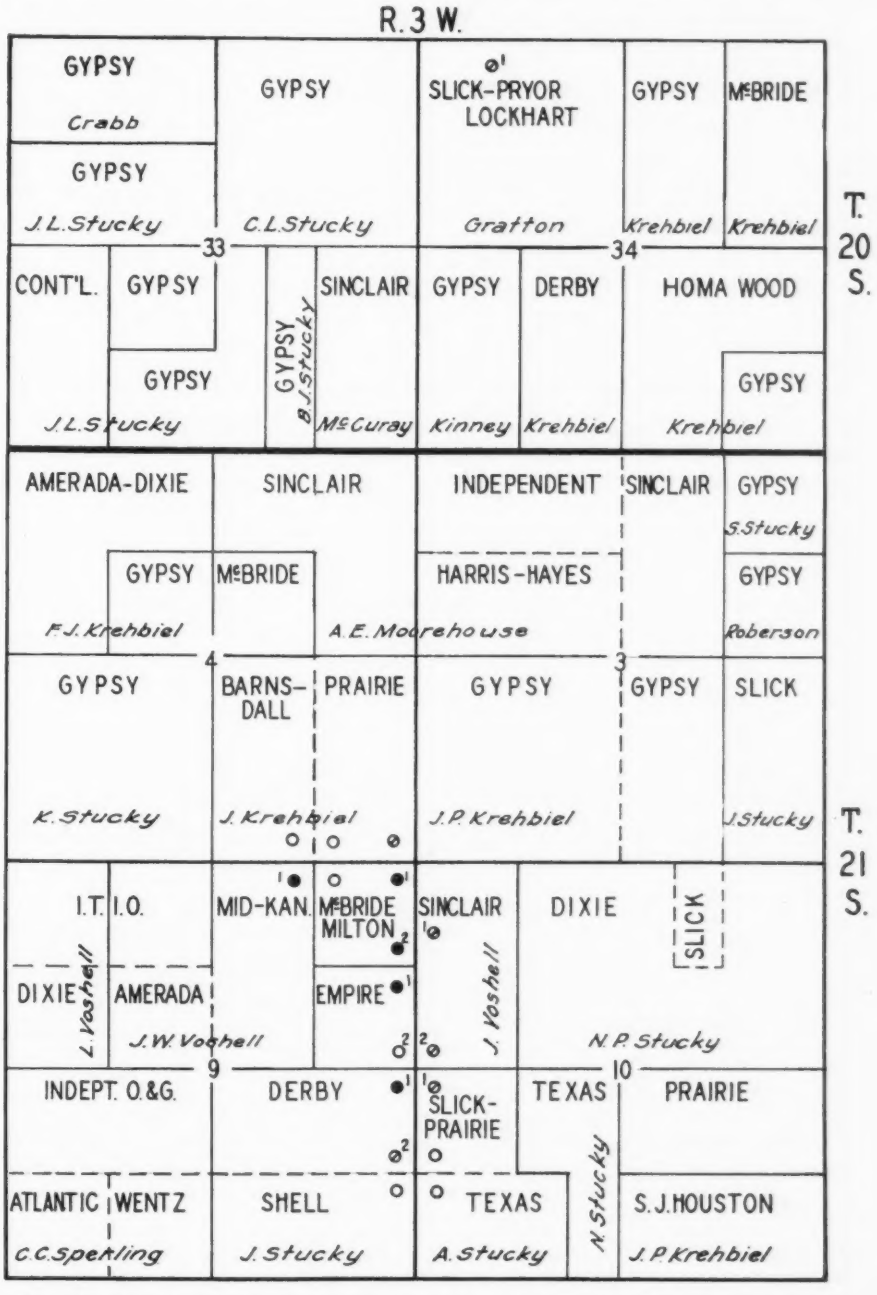
The wells already in are all high on the structure with no suggestion of edge production having yet been reached. Present estimates of some geologists are that this new area may be two miles wide by six miles long, and with no restrictions on drilling and production, might easily make a peak of 60,000 barrels a day.

A pool of those dimensions, with average well initials of around 1400 barrels, is entitled to something more than a nod from the rest of the industry.

For the time being, however, it is producing under an iron clad proration plan that will considerably retard its development. This plan is really something more than the usual proration agreement, for all operators are to cut their daily average per well to 50 barrels, regardless of their initials. This program is to be in force until Feb. 15. As to whether it will be continued after that date remains to be seen but it is likely that a similar plan will then be adopted.

The first impression of the Voshell pool was that it was producing from the true Wilcox. The lower pay being definitely upper Simpson is probably responsible for this conclusion. If it were true, then this pool would represent the most northerly extension of this horizon above the Oklahoma line. It was thought for some time that a few of the wells in the Eldorado-Augusta area were getting their oil from this pay, but this does not now seem likely.

A microscopic examination of the well cuttings in the Voshell pool gives rise to the conclusion that the lower pay of that area is correlative to the "Seminole Wilcox," rather than



Map showing development to date in the Voshell pool of McPherson county, Kansas

the true Wilcox. The differentiation is not just a hair line distinction as might at first be supposed.

The name "Seminole Wilcox" comes from the misapplication of the latter part of the name to a sand with similar characteristics found in the Seminole area. This sand was later classified in the Bromide, or upper Simpson series, of Decorah or upper Black River age. A more common term that is often applied to it is upper Wilcox, but it should not be confused with Wilcox sand that is found at Tonkawa and elsewhere.

The chat formation, that cherty lime bed which is found along the unconformable contact of the Mississippian with the Pennsylvanian, is just as erratic in this new area as it is in other parts of the state. Somewhere between section No. 9-21s and section No. 34-20s is a geologic low, or saddle, which may account for the change in the producing possibilities of the chat in these two areas.

In the former, this formation carries only a small amount of gas, the maximum volume found thus far being but two million cubic feet. The section to the north, however, has one well, the Slick, Pryor and Lockhart No. 1 Gratton, C NE NW NW 34-20-3W, that is getting a daily average of 175 barrels from the chat. The well is making over two per cent water and the oil is about 38 gravity A. P. I. a poorer grade crude than that found in the lower pay of the wells to the south. Since production from this horizon, wherever found, is rather tricky with water and inconsistent in curves, this well is being deepened to the better pay below.

The lower geologic section at Voshell, as found in the few wells that have been drilled to date, is decidedly interesting. This is particularly true of the Mid-Kansas No. 1 Voshell, NE NW NE, 4-21-3W. But 18 feet of Mississippi lime is logged in this well as compared to 74 feet of this formation found in the discovery well, McBride's No. 1 Voshell, two locations to the east. This thinning to the west is probably due to erosion on the top of the fold. Coupled with the fact that the Mid-Kansas well logged some 50 feet higher on the chat than other wells, it is evidently higher on the structure.

Immediately below the Mississippi lime is an unusually thick section of the Kinderhook or Chattanooga shales. Ordinarily this formation seldom has a thickness in excess of 50 feet. In the Lygrisse pool, is Sedgwick county, the Shell Petroleum Corp., had but 42 feet of Kinderhook in its No. 1, 15-26-2. It is possible that the 260 feet found at Voshell might be accounted for in a structural way, though it seems more reasonable to suppose that this unprecedented thickness is depositional.

The position of the Voshell area in south central Kansas suggests this conclusion. It lies in what may be called the overlap territory of the regional changes in the Mid-Continent, pre-Pennsylvanian strata. It seems to be the halfway point between the Iowa section on the north and the Oklahoma section on the south. The Ordovician section of the former is thinning toward the south and the corresponding beds of the latter are thinning toward the north. It is thought by many geologists that they overlap each other somewhere in south central Kansas.

There is also a change in the lithologic character of the various beds. Sandstones become limestones and limestones and shales may be correlated in some places with red beds. Perhaps these changes may also account for the presence within the Kinderhook of a sand body, like that found in the Mid-Kansas well.

This stray sand, which was topped at 3181 feet, had a thickness of 31 feet and was carrying a fair amount of oil. It is possible that it is but a lens within the large shale body or it may be a part of the overlap mentioned above. In either case it will have to get along for the present without the dignity of a name, though "Voshell sand" would probably answer the purpose.

The stray pay has not been found in any other well in the area, though drilling in the north-south line above and below it may result in its being tapped in other holes. As a lens, with a thickness of but 30 feet, its production is likely to "peter out" in a short time for it is doubtful if it could have a length greater than four miles. If, on the other hand, it is the result of an overlap it may produce in some quantity.

BELOW the Kinderhook, or Chattanooga shale, in the Voshell section, is a dolomitic lime known as the Trenton. Stratigraphically this bed may be correlated with the middle Viola of the Oklahoma section. In the Mid-Kansas well this horizon was topped at 3226 feet and the discovery well is producing from it at a depth of 3268 feet. This lime is the same horizon from which the Wright pool is producing, though it is thicker in the latter area than at Voshell.

Structurally, the Voshell pool is almost identical to a dozen other pools in Oklahoma and Kansas. Its geologic section may be different and surface indications of subsurface conditions may be lacking, but the oil reservoir owes its origin to the same things that are found elsewhere in the Mid-continent. Pre-Pennsylvanian deposition on the old eroded surface of the Arbuckle, buried granite ridges with a general north-south trend beneath the Arbuckle, and subsequent earth movements have all played their parts. The regional result is that the trend of the buried ridges is the trend of the line of pools.

There are seven wells drilling in the Voshell at the present writing and though several locations have been staked to cover offsets, it is doubtful if any other operations will be started in the near future. With the current drastic proration program in force there certainly is no reason for drilling in a hurry. Wells can be completed in 28 days when times are better and the oil is needed. Many geologists regret this condition, at least from a scientific standpoint, for more subsurface information would be appreciated.

Gray County Producers Plan Proration

AMARILLO, Dec. 21.—Agreeing that the Gray county, Texas, producing situation is far from tranquil, operators in a special called meeting Dec. 19 named a committee to work out proration plans and report to another meeting on Dec. 27. H. M. Stalcup, vice-president of the Skelly Oil Co., presided. The committee consists of J. L. McMahon, The Texas Co.; Stewart Dewar, Phillips Petroleum Co. and E. B. McFarlin, McMan Oil & Gas Co.

Mr. Stalcup was instructed to ascertain how much oil the several crude purchasing companies will buy in January. He said that the production was much too high. The Texas Co. recently reduced its pipe line runs 40 per cent and the Humble Oil & Refining Co. 50 per cent. The Prairie Oil & Gas Co. was reported to be buying 4000 barrels daily more than it requires and it was believed it would have to make a reduction soon.

The shut down agreement that has been operative for more than two months has not fulfilled its purpose. An off-hand opinion expressed was that the county should not be permitted to produce more than 40,000 barrels daily to meet the market demands. Potential production is approximately twice that amount.

New Industrial Gas Line Being Laid in Ohio

CLEVELAND, Dec. 21.—The Trans-Ohio Gas Corp., subsidiary of the Kenrow Co., Wooster, O., is building a gas line from the Ashland county gas fields to Mansfield, O. The line will consist of approximately 20 miles of 8⅝-inch, outside diameter line, six to nine miles of 6-inch line, and three miles of 4-inch line.

The Trans-Ohio corporation has a contract to deliver gas to the Empire Steel Corp. at Mansfield.

Officers of the Trans-Ohio corporation are: Jacob L. Eckstein, president; John J. Klise, vice president, and T. O. Daly, secretary and treasurer.

Majors Decide Not to Curtail Drilling at Santa Fe Springs

By Jack N. Westsmith
N. P. N. STAFF WRITER

By Telegraph
Los Angeles, Dec. 21

TOTAL production of crude in California for November was 21,317,540 barrels, an average of 710,585 barrels per day, and a decrease of 157,001 barrels per day under October average production. These figures are from the Pacific Coast office of the American Petroleum Institute.

Total stocks of crude and petroleum products on the Pacific Coast decreased during the month 1,096,094 barrels, giving a total of 183,748,450 barrels. Total stocks increase for 1929 up to Nov. 30, was 43,747,556 barrels. Gasoline stocks increased 300,205 barrels during November to a total of 16,485,197 barrels.

Sixty-eight wells were completed during November for initial production of 91,238 barrels compared with 55 wells completed during October for 50,563 barrels.

At a meeting of leaders of the California oil industry on Dec. 20 it was decided not to attempt to curtail drilling at Santa Fe Springs at present, Umpire Grimm to be given the right to set potentials for wells in the field prior to their completion and to put the larger part of curtailment burden on the major operators in order to remove antagonism of the independents to the shut in program.

Production at Santa Fe Springs was reduced to 163,234 barrels and at Elwood to 29,000 barrels on Dec. 19, a decrease of 20,000 and 8000 barrels respectively since Dec. 16. Notwithstanding the cooperation of operators, production is expected to approach the 200,000-barrel mark daily during the next two months at Santa Fe Springs.

Nineteen landowners of fee land in the Kettleman Hills field demanded Felix No. 1 of the Petroleum Securities Oil Co., be put on production immediately. As the well is now standing cemented over the oil sand every effort is being made by major executives to avert a catastrophe that might result from completion in this highly potential area. It is expected landowners will be paid their royalties by obtaining subscriptions among operators interested, with the understanding that the inpending completion be deferred to a later date, possibly July 1, 1931, when the balance of the north dome will be opened. This is a tentative plan.

The Ohio Oil Co. completed its wildcat Recreation Gun Club No. 1, east of Venice, in Plan Del Rey district Dec. 19, for 3000 barrels of 21 gravity oil and 500,000 cubic feet gas from 6199 feet. Although the well is on property considered condemned for oil, geologists now advance the theory the oil coming from the Miocene formation and the structure is probably related to the nearby Inglewood field.

For additional details on the production situation in California see story on Page 47 of this issue.

The structure is expected to be limited, the greater part to lie under the ocean where it cannot be drilled because of a law passed at a recent session of the state legislature, prohibiting the granting of additional tideland permits.

Frenzied development such as experienced at Lawndale and Santa Barbara Mesa is not expected in the new field, the majority of surrounding property being held by few companies.

No action on the injunction suits to prevent gas waste in California is expected before Feb. 1. The hearing is set for Jan. 10, before Superior Court, provided the case before the Supreme Court is settled by that time. Major company executives still hold out hope that the law will help hold the flush fields in check.

Oklahoma City Proration Continues on Time Plan

Staff Special
TULSA, Dec. 21

THE Oklahoma City pool will continue to be prorated on the time plan—that of alternately closing wells and opening them—during the first quarter of 1930.

In a meeting held in Tulsa Dec. 20 it was voted to substitute a plan based on potential capacity of the wells. The report of the engineers' and production men's committee, formulated in two meetings previously held, was not unanimously supported by the committee and was presented as a majority report.

Representatives of the Mid-Kansas Oil & Gas Co. and the Prairie Pipe Line Co. feared that the plan would be unworkable. The meeting, however, including these same representatives, voted to try the plan with the understanding that if it proved to be injurious to any operator's interest another meeting would be held to iron out the difficulty.

Putting the plan into effect was contingent upon the unanimous support, or acquiescence, of all concerned. T. B. Slick, who was not present at the meeting, had previously told his representative that he would not approve the change in plan and later conversation with him by operators found him standing on his original decision.

During January the wells will be on production 60 per cent of the time, as the general plan for the state which the state corporation commission was to be asked to issue as an order on Dec. 23 contemplates restriction of the Oklahoma City pool by 40 per cent. The wells will be divided into the "A" and "B" classes, as heretofore. During January the schedule for producing them is as follows:

A wells open Jan. 1, 2, 3, 4.
B wells open Jan. 4, 5, 6, 7, 8, 9.
A wells open Jan. 9, 10, 11, 12, 13, 14.
B wells open Jan. 14, 15, 16, 17, 18, 19.
A wells open Jan. 19, 20, 21, 22, 23.
B wells open Jan. 23, 24, 25, 26, 27, 28.
A wells open Jan. 29, 30, 31.

Thus there will be an overlap in time, or days when all wells are permitted to produce, on Jan. 4, 9, 14, 19 and 23. A number of the wells now completed will not come on production until February or later, owing to the penalties imposed against them because of the proration in drilling time.

The committee report which proposed the substitution of a potential proration plan asserted there were difficulties in administering it, but that it was believed it would result in an increase in ultimate production of oil and casinghead gas that would more than offset the inequalities. A new plan of taking the potentials of the wells, suggested by M. J. Kirwan, manager of production for the Indian Territory Illuminating Oil Co., was included in the report. It provided for the use of the average of the potential at the beginning and the end of the period, in this case semimonthly. That would take care of the decline or increase in productive capacity of a well during the period.

Reports that the Tidal Pipe Line Co. and The Texas Pipe Line Co. will lay lines to the Oklahoma City field lacked confirmation today by officials of the companies.

An all night station of the Standard Oil Co. of Ohio in Cleveland

Who Buys Gasoline at 4 A. M.?

By E. L. Barringer
N. P. N. STAFF WRITER

CLEVELAND

GAY night life and the trucking business have helped increase the number of service stations in cities that keep open all night. Tourists also are patrons of these all night stations in the summer months.

Theaters have been with us a long time, but the night and supper clubs are comparatively recent innovations in entertainment. The theater crowd going straight home brings a rush at the stations about midnight. The night and supper clubs will hold some of the crowd until 2 or 3 o'clock in the morning, resulting in some business at the stations during these hours.

Apartment houses indirectly have contributed to keeping crowds on the streets late at night, the oil men say. Cramped quarters of an apartment drive families to go out for entertainment instead of using the facilities at home.

Trucks add to sales of all night stations along main highways. More freight is being moved by trucks at night, and the city all night station is patronized when the truck starts out. Vegetable trucks help gasoline sales in the truck farming season. These trucks bring fresh vegetables and fruit and flowers to the city in the early morning hours, and patronize the stations along the route.

Tourists are taking to the road, in the summer months, at night when traffic is not so heavy. In some cases service stations on main highways are open all night only in the summer.

Conventions, exhibitions, and athletic events also help keep the crowds on the streets until late at night, and add to the number of possible customers for the all night stations.

Football is making itself felt as a business builder of night patronage at stations along the roadside and in small towns as well as in the city. The Standard Oil Co. of Ohio, for instance, keeps its stations open along main highways the football crowd is using as long as business warrants on Saturday nights after games.

Each fall there are several "big games" in Columbus, Ohio, and Ann Arbor, Mich. These games attract fans from all over Ohio, many going by auto. Hotel accommodations are inadequate to handle the crowd, and many fans drive home after the game. Traffic is heavy around the stadia so the motorists travel as far as possible before buying gasoline. On some Saturday nights stations along the highway into Cleveland will be busy up to 1 or 2 o'clock in the morning selling gasoline to football fans driving home from Columbus.

A check of major distributors in Cleveland showed that more company operated service stations are being kept open than in the past. Two national distributors joined the open all night class in Cleveland within the past year, while another distributor has put one more station on the all night list. One of the large distributors is constructing about 30 stations that will be kept open all night. Almost 50 stations now are kept open all night in greater Cleveland.

These stations are on main highways, on traffic arteries from the downtown theatrical district, and in the apartment house section. Greater Cleveland has about 1,000,000 population. It is spread out east and west, with industrial plants mainly in the south side of the city.

Most of the all night stations are in the section to the east of the business district extending out about five miles. On all of the through streets to the east side the late motorist will find all night stations.

To reach the west side of the city, traffic goes over a viaduct, near the lake, at the business district. At the west end of the viaduct several stations offer all night service. One station on a main street to the southwest section, about half way to the corporation limits, is open all night. On the main highway to the west, to Toledo, Detroit and Chicago, there are several all night stations about half way out, and another one at the western edge of greater Cleveland.

In addition to these all night stations, service may now be obtained later in summer than in winter. The general closing hours for other stations are from 11 to 12 o'clock in summer, and most companies shut up shop an hour earlier in the winter. A few years ago most stations closed at ten the year around.

The customer in the early morning hours is in a different buying mood

than in the daytime. Distributors reported that they considered the all night station merely a convenience. Gasoline is bought in small quantities, a gallon or two, so the auto can be driven home after the theater or party. Motor oil sales are only a quart or so, just enough to bring up the level in the crankcase. Complete oil changes are rare. Gasoline is the main sales item.

There is a good call for anti-freeze solutions when a cold wave comes over the city during the evening. Many drivers will leave the car on the street or parking lot early in the evening without a thought to the weather. The cold wave comes on while they are indoors, and on the way home it is necessary to stop at a station to thaw out the radiator or to check the anti-freeze solution. At some all night Cleveland stations, where the lifts are enclosed, the men are kept some nights until 3 a.m. thawing out radiators.

The cold snap that comes in the afternoon will attract business to the station early in the evening, and will not be of much benefit to the night crew. The afternoon cold wave brings the driver to the station on his way to the theater or party, and he does not have to stop on his way home in the morning.

Some of the early morning customers are inclined to be talkative and friendly to the station attendant, even to the point of offering him a drink, but most of the customers are anxious to be on their way home. This second class of customers want their gasoline in a hurry, and do not want much in the line of service.

One chain has tried keeping a station open all night several times in the past year, but none of the ventures was successful. The best gallonage was 100 gallons a night. In exchange for some of the gasoline the attendant took in blankets or spare tires as security, when the drivers were out of cash. The chain soon discontinued the all night station.

All the distributors, excepting one, employ attendants for night work only. The exception is a station of The Texas Co. This station went on a 24 hour basis last spring, and one man was employed for the night work. The system was not satisfactory, on account of the difficulty of getting a man to work steadily at night. Now the station has three 8 hour crews, rotating working hours each week.

With the exception of three all night lubrication stations, one man works alone at the all night stations. His hours are 11 p.m. to 7 a.m. He comes on usually at the end of the evening shift, and overlaps by 30 minutes to an hour the crew in the morning.

At two lubrication stations of the Standard Oil Co. of Ohio there are two men on the night crew. These men attend to all departments of the station. At these two stations, and a lubrication station of the Cities Service Oil Co., the evening lubricating men stay as late as necessary; their work being particularly heavy in cold weather.

The danger of hold ups was reported as no greater late at night than in the evening hours. One distributor reported that most of the hold ups happen early in the evening, or about 11 p.m., the closing hour. The possibility of customers driving away without paying for gasoline is said to be not as great in the early morning hours, as traffic is not heavy and it is easier for the attendant to obtain the license number.

Whether the all night station was profitable was questioned by the distributors. All agreed that there was an intangible element of advertising in having 24 hour service.

One distributor computed gallonage as 75 to 100 per cent larger in summer than in winter at such stations. He thought his all night stations about broke even in summer, but ran in the red in winter. Another distributor said his ratio of oil to gasoline was 3 to 100 gallons during the day and evening, but dropped to 1.5 to 100 gallons on the morning shift.

None of the stations reported having many special duties, as cleaning up the station, for the night man. One distributor had his night man give the rest rooms a good cleaning. The general practice is for each shift to keep the station clean and not leave work for the next crew.

The peaks of the early morning business varied considerably at different stations. As a rule the stations are busy around midnight, again around 2 a.m., and from 4 or 4:30 on. Vegetable trucks help the 4 o'clock peak in the summer time. The midnight rush hour is attributed to theaters, that at 2 o'clock to night clubs and late parties. These peaks may shift either way for no apparent reason, and vary as to length.

Following are the reports of some of the major distributors in Cleveland on all night stations:

The Texas Co., started last spring with one station, on a main street to the east side near the business district. One man was on duty nights only, but the station now operates on three 8 hour shifts.

Pocahontas Oil Co., has been operating eight all night stations for sev-

An all night station of the Cities Service Oil Co. in Cleveland where lubrication work is done as late as there is any call for this service

eral years. The stations are on main streets to the east and west sides.

Great Western Oil Co., believes it has one of the first all night stations in Cleveland, on a main thoroughfare to the east side, and recently started keeping a station open in Shaker Heights. In the summer time two more stations, one on each side of the city, on national highways to the east and west, are kept open on account of tourist traffic.

Canfield Oil Co., has no all night stations.

Paragon Refining Co., has been keeping three stations open all night for a year and a half. Two are on the east side and one on the west side.

Cities Service Oil Co., operates two stations. One, at the west end of the viaduct to the west side, has been open for several years. The new station on Clifton Blvd., about half way out of the city, has been open all night since it was completed in August.

National Refining Co., for six months has been operating two all night stations, one on an east side highway, and one at the western edge of greater Cleveland.

Standard Oil Co. of Ohio, operates about 30 all night stations, including two lubricating stations. Two stations are on the west side of the city, the others on the east side.

Tennessee Lube Oil Tax Bill Is Withdrawn

NASHVILLE, Tenn., Dec. 19.—The bill to tax lubricating oil 5 cents a quart, for the retirement of highway notes, was withdrawn last week from the Tennessee legislature upon advice from the governor that enforcement of the measure would be cumbersome.

To retire the highway notes the governor suggested, in his message, that beginning Dec. 31, 1930, one cent of the state gasoline tax be set aside, in addition to one cent to be set aside beginning Jan. 1, 1935. At present highway notes total $47,200,000.

In his message to the legislature asking withdrawal of the oil tax bill the governor reiterated that he wanted the tax applicable only on oil used in motor vehicles. The attorney general's office, he said, advised that this tax would be complicated on account of the machinery involved to rebate the tax collected on industrial and farm oils.

The Tennessee Oil Men's Association, through Lew W. Collins, executive secretary, fought the bill, pointing out to the legislature the complications involved in collecting such a tax. The association directors Dec. 5 adopted a resolution on the bill, pointing out also the possibilities of tax evasion, and "bootlegging" in counties around the border of the state.

* * *

Retail dealers in Tennessee purchasing gasoline in tank car lots shall give bond the same as jobbers and wholesalers which is $5000 to $10,000. This legislation was enacted last week by amendment to the acts of 1927, and was signed by the governor.

In announcing the legislation in a bulletin, the Tennessee Oil Men's Association reported that "this concludes the legislative program of your association, and the amendment to and signing of this bill should have a most wholesome effect on the ethical development of our industry in this state."

Indiana Jobbers' Secretary Has Varied Oil Career

INDIANAPOLIS, Ind., Dec. 20.—A career which began in the oil atmosphere of southern Kansas, penetrating step by step into about every branch of the industry, including the equipment field, has landed Max L. Wickersham, in the office of executive secretary and treasurer of the Indiana Petroleum Association.

Previous to his oil connections, he was chemist with the Western States Portland Cement Co. At one time he had his own lubricating and blending plant. When the war came he gave up this plant and joined the Government by doing special laboratory work.

All of his time after the war was devoted to oil and allied businesses. He became sales supervisor for the Tide Water Oil Corp., New York, in Iowa, Nebraska and Illinois. Some time after he joined the Automobile Rotary Lift Co., Memphis, managing sales for that company in 13 states, and later, he went with Gilbert & Barker Mfg. Co., Springfield, Mass., manufacturer of gasoline pumps. His present duties follow his connection with the Gilbert & Barker company.

Max L. Wickersham

One of the first things to Mr. Wickersham's credit in his work with the Indiana association is the holding of a two-day annual convention, instead of the usual one-day meeting. This convention, which was held Dec. 5 and 6, was the most successful ever held by this association and attendance was nearly three times as large as at any other previous convention, according to Morris G. Young, publicity director for the association.

Mr. Wickersham is married and makes his home in Indianapolis.

Texas Employes Organize Company

CHICAGO, Dec. 21.—William Jervis, Fred L. Hawekotte and H. D. Eccleston, all formerly with The Texas Co., are respectively president, vice-president, and secretary-treasurer of the newly formed Spartan Petroleum Co., Chicago. The Spartan Co. will be distributors of the Transcontinental Oil Co.'s products through 10 service stations recently purchased in the western part of this city.

Ethyl Corp. Wins Suit Against Dye Seller

CLEVELAND, Dec. 21.—The United States district court at Cleveland has entered a consent decree restraining R. Prescott Beardslee, a Cleveland gasoline and oil broker, from using the name Ethyl Color & Chemical Co. or any other name which includes the word Ethyl. Beardslee operated as the Ethyl Color & Chemical company, selling red dye for gasoline under the name Ethyl Color.

The court also restrained him from acting as agent, employe, officer or partner or being financially interested in any company or firm using as a part of the business or corporate name the word Ethyl in connection with the manufacture, sale or distribution of gasoline, motor fuel, motor fuel oils or any chemicals or substances designed for adding to those commodities.

The action was brought against Beardslee by the Ethyl Gasoline Corp. Maurice F. Hanning of Holliday, Grossman & McAfee, Cleveland; E. S. Rogers, and Allen M. Reed were attorneys of the Ethyl corporation.

Oklahoma Jobbers Set Date

TULSA, Dec. 20.—The Oklahoma Oil Jobbers Association will hold its annual convention at the Huckins Hotel, Oklahoma City, Jan. 23 and 24, according to a decision reached by the directors. The program will be announced at a future date.

Code Can Remedy Split-Account Evil

By Roger B. Stafford
N. P. N. STAFF WRITER

LARGE measure of relief from the evils connected with split gasoline accounts can be secured through the code of ethics. The split gasoline account is that of the small independent dealer who sells the gasolines of two or more distributing companies. Sometimes he has as many as 15 different brands of gasoline at a station that can profitably support only a few pumps.

The relief is expected to come under Rule 1 of the code which provides that the dealer shall pay the actual cost of installing gasoline pumps and tanks and shall deposit in advance $100 for each underground unit to cover the installation cost. The dealer must, under the code, pay for all permits or privilege taxes attaching to the installation or maintenance of the equipment.

The split account, which first became a serious problem in the Atlantic and Pacific seaboard states, found fertile ground in the efforts of large oil companies to gain a large number of gasoline outlets. These companies in some localities literally forested the highways with gasoline pumps. Each roadside station of an independent dealer had several pumps.

The Practice Has Spread

The split account practice the last two or three years has been pushing inland from the seaboard territory and the last year it has become a problem along the main national highways and small towns west of the Allegheny mountains.

A much stronger case can be built against the split account than for it, it seems. About the most forceful argument in behalf of this scheme of distribution is that it gives a refining or marketing company more representation in pumps than if only exclusive account business were undertaken.

The split account may give a company additional representation but at what price!

The split account means the multiplication of investment in marketing facilities, for the industry generally, without a proportionate increase in the volume of gasoline put out.

The split account means a multiplication of hauling expense without a proportionate gain in revenue. The average size of dumps may be cut because of the small gallonage per pump of split accounts and the small size of the tanks usually installed at stations of split account dealers.

Credit Risk Increased

The split account means an increase in the credit risk. A company with a strict credit policy and alert credit department may keep up its collections to the minute, but the more lenient supplying companies may find collections slow or accounts uncollectable at the end of a season from such accounts.

The split account provides fertile ground for all the evils of substitution and bootlegging. With two to a dozen different tank trucks hauling gasoline into a split account station it is easy for the bootlegger to unload his poor grade of motor fuel into the tanks of the company which puts out an excellent grade which the refiner supports with an extensive advertising and merchandising campaign.

Substitution Made Easy

The split account requires extra vigilance against substitution and bootlegging. The expense of policing may run to a high figure.

Some companies have refused in the past to install their pumps and tanks at stations with the pumps and tanks of other companies. Other companies have indulged in split accounts in only a limited way and now some of these companies are coming to recognize that they have trod upon uneconomic ground. Several of the latter group, it has been learned lately, have adopted a policy of pulling pumps from split accounts where the gallonage moved by them did not pay a reasonable return on the money invested in the pumps and tanks.

In the latter group is a company, NATIONAL PETROLEUM NEWS has learned, whose manager of retail distribution had an eye-opening experience when touring in New England last summer. This man drove into a split account station which had 14 pumps supplied by 10 different distributors.

200 Gallons Through 14 Pumps

Conversation with the owner of the station developed that during the summer season this station moved about 350 gallons a day on Saturdays and Sundays and an average of 200 gallons a day the other five days of the week—through 14 pumps. This dealer on his peak days averaged only 25 gallons per pump. One shudders to speculate what the gallonage would be on a bleak winter day.

For a gallonage that would be only a fair day's business for one pump, 10 companies had put in, without cost to the dealer, 14 pumps. It is safe to say that each pump with its tank, fittings and cost of installation represented an investment of $200. The pumps, tanks, fittings and installation expenses of the outfit represented, conservatively, an investment of $2800—and all for a gallonage of 1700 gallons a week—split 10 ways—in the best season of the year.

Retaliation Is Costly

An Ohio marketer tells of a two-pump station that was doing 400 gallons a day. It was an exclusive account. Another company came along and put two of its pumps into the station, which continued to sell 400 gallons a day, but the gallonage was divided between the pumps of the two companies. So the company that had been in this station first went down the road to where the second company had an exclusive dealer whom it convinced should have its gasoline also. The pumps were installed and the gallonage of this station was split, also.

Each of the two market companies had doubled its investment in marketing facilities but had not increased its sales one gallon.

If the code of ethics had been in force five years ago and the provision had been adhered to that dealers must pay for the cost of installation, it is doubtful that the number of split account stations would be more than a small fraction of the number today.

A.P.I. Committee Blocks Standard Temperature Taking Proposal

CLEVELAND, Dec. 20

PROPOSAL that a standard method of taking the temperature of petroleum products in tank cars be drafted by the A.P.I. technology committee, was tabled, at the recent American Petroleum Institute meeting in Chicago, by the general committee on railroad transportation of the institute because the subject was believed to be outside of the province of activities of this committee.

Opinion was expressed that if such a proposal was to be adopted it would have to come from the sales division of the industry which in the institute is not so well organized as the other divisions.

It is probable that no further action toward developing a standard method of temperature taking, will be taken up by any institute committee for another year although the taking of temperatures of tank car contents has been a controversial point between many refiners and their customers.

The sub-committee on reconsignment of the general committee on railroad transportation reported at the Chicago institute meeting in favor of a minimum of one reconsignment at through rates. This report was adopted by the general committee with the stipulation that the sub-committee should not oppose two or more reconsignments at through rates if the National Industrial Traffic League should agree to more than one reconsignment.

Reconsignments in excess of the number which will probably be agreed to in the next year, would take combination rates. Some traffic men were opposed to more than one reconsignment at through rates because, they argued, a multiplicity of reconsignments of shipments would cause too great a delay in getting tank cars back to their owners and might lead to practices by brokers and jobbers that would work to the disadvantage of refiners in moving their products in their own cars.

The general committee, in adopting the report of a special committee on gaging tank cars, recommended to the institute that suitable technical committees be appointed to prepare for submission to the general committee statements of recommended good practice in the gaging of tank cars by water gaging plants, by external linear measurements, and by internal linear measurements. It also recommended "that if at any future time it appears desirable, similar statements of recommended good practice should be prepared for gaging tank cars by other means such as flow meters and weighing."

If the statements are prepared, recommended by the general committee and approved by the executive committee of the institute, they are to be circulated throughout our industry.

Both the general committee on railroad transportation and the general committee on fire prevention voted not to oppose the American Railway Association's proposed rule to require the bonding of gasoline loading and unloading lines to railroad rails as a means of preventing fires from stray currents or static electricity.

The committee approved a proposal that the party responsible for stray currents should pay for the cost of eliminating them. It was said in the discussion on this proposal that stray currents had been traced to power plants and electric railroad crossings several miles distant from the loading or unloading racks.

The committee voted to ask the mechanical committee of the American Railway Association to reconsider its recommendation that when tank car tanks are replaced that cast steel side frames be installed. The A.R.A. committee has announced that it will not approve renewed tank cars unless they have cast steel side frames.

The sub-committee on classification will continue a study of petroleum products classification for rate purposes. One of the questions to be considered is whether road oil should be classified as asphalt or fuel oil.

Uniformity of practice by railroads in figuring tank car mileage will be sought. At present some railroads figure mileage on a station-to-station basis but other roads figure it on the distance between the outer yards of points of origin to the outer yards of points of destination.

Empire, Wolverine Merge Stock

OIL CITY, Pa., Dec. 23.—A holding company has been organized to take over the stock of the Empire Oil Works, Oil City, and the Wolverine Lubricants Co., motor oil distributors on the east coast, with New York headquarters. Each company will retain its identity and continue to operate as in the past.

Empire Oil Works has announced that it will continue to supply its trade with the present brands. Wolverine Lubricants will continue to market "Wolf-Head" motor oil, supplied by the Empire refinery. To handle this additional volume Empire will expand at once its facilities for producing finished motor oil. Extensions will be made on the filter house, the Sharples plant will be increased, and new retorts and towers will be added.

The holding company is the Wolverine-Empire Refining Co., with offices in New York. Officers are E. W. Chase, president of Empire, chairman of the board; C. H. Ellingwood, president of Wolverine, president; F. W. Baer, treasurer of Wolverine, treasurer; A. W. Scott, secretary and treasurer of Empire, secretary; F. S. Smith, assistant treasurer of Wolverine, assistant treasurer; and Mr. Baer also assistant secretary.

All stock of the Wolverine company has been taken over by the holding company, and about 90 per cent of Empire's stock has been turned in. The holding company is incorporated in Delaware.

Empire Oil Works was founded in 1879 by the late A. L. Confer. In 1925 it was consolidated with the Empire Oil & Grease Co., a distributing associated company. Its plant at Reno, Pa., has always operated on Pennsylvania crude oil, and will continue to do so. In July, 1928, Empire took over the Tidioute Refining Co., at Tidioute, Pa., and the stock of this company goes into the holding company.

Wolverine Lubricants Co. was organized in 1913, and markets motor oil on the eastern seaboard. It has a compounding plant at Reno, adjoining the Empire plant. Officers of Empire, Wolverine, and Tidioute will retain their positions.

Waverley to Install New Towers

CLEVELAND, Dec. 20.—The Waverley Oil Works Co. has practically completed plans for the installation of five new fractionating towers at its Pittsburgh plant, together with various other items of new equipment, according to information received from Thos. J. Hilliard, president of the company.

While the details of the new construction are not yet available, Mr. Hilliard says that the most recent developments in rectifying equipment will be included in the design. "More has been learned about refining Pennsylvania crude in the last three or four years, probably," Mr. Hilliard states, "than in all the time previously, and we intend to overlook nothing that will aid us in keeping abreast of the most modern practice."

The new equipment is being designed by Dr. E. H. Leslie, well known in the industry for his work on apparatus and refining methods.

Aluminum Tank Cuts Weight, Increases Payload Capacity

CLEVELAND, Dec. 21

STANDARD STEEL WORKS, North Kansas City, Mo., has delivered to The Texas Co. what is believed to be the first all-aluminum gasoline delivery tank ever built.

The tank is of 2400-gallon capacity, mounted on a Fruehauf drop-frame semi-trailer and drawn by a GMC truck tractor.

The aluminum alloy construction permits a 50 per cent saving in deadweight of tank and a 20 per cent increase in pay load. In other words, at a given gross weight for the tank, load and trailer with fifth wheel, the aluminum job permits the use of a 2400-gallon tank while a steel tank with the same gross weight could have a capacity of only 2000 gallons.

The Standard Steel Works has supplied the following weight comparisons:

	Pounds
2000 gal. steel tank, weight	5545
2000 gal. gasoline, weight	13,200
Drop frame semi-trailer and fifth wheel, weight	5300
Gross weight	24,045
2400 gal. aluminum tank, weight	2775
2400 gal. gasoline, weight	15,840
Drop frame, etc., weight	5300
Gross weight	23,915

The price of the aluminum tank is approximately three times that of a steel tank of the same size but the saving in operating and maintenance expense and the high scrap value of the aluminum (at present 18 cents a pound) is expected to effect a large saving during the lifetime of the tank.

Saving also is possible in the cost of the power unit. Taking a 750-gallon tank job, for example, a power unit that will perform all required service costs approximately $12.50. With the saving in weight possible with an aluminum tank, a $700 truck tractor could be used without overloading, one oil company truck man said in discussing aluminum tanks.

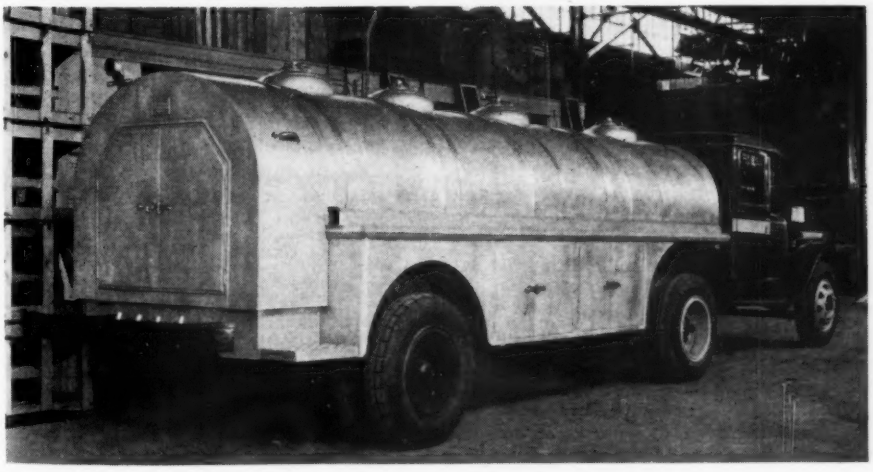
Another factor would be a saving of about $60 a year in painting. The aluminum, not being corrosive, would not have to be painted. Lettering would cost only about $15 a year. With a steel tank, the cost of painting and lettering averages $75 a year. Over a 10-year period of life for the tank and trailer, the saving in painting alone would amount to $600.

Saving in gasoline and oil consumption is another factor. Soon after a gasoline tank leaves the bulk plants it begins to lose a considerable part of its payload. The load is being diminished at intervals and when the last dump is made, the unit may have as long a distance to travel back to the bulk plant as it traveled since leaving the plant.

With 50 per cent less deadweight in the tank shell when the shell is of aluminum, there is considerably smaller consumption of motor fuel and oil in the return trip than when the tank is of steel, engineers say. Because delivery has been made on only one aluminum tank truck, comparative figures covering gasoline and oil consumption cannot be had.

As great tensile strength can be built into an aluminum alloy tank as in a steel tank, engineers say.

The first all aluminum tank Standard Steel Works built was exhibited at the Tulsa exposition in October. The company is preparing to handle a larger demand for aluminum tanks than it had for steel tanks and in 1930 expects to expand its manufacturing plant in North Kansas City, according to a recent announcement.



Aluminum semi-trailer tank for gasoline delivery made by Standard Steel Works, Kansas City, Mo., and bought by The Texas Co.

Plan Marketers Building For Exposition

TULSA, Dec. 21.—An additional building to house the exhibits of refiners and marketers at the International Petroleum Exposition and Congress will be constructed before the opening of the 1930 oil show in October, according to plans announced by D. D. Wertzberger, chairman of the buildings and grounds committee.

The building will be one of the steps toward the realization of the Exposition directors' plan to make the show a complete one in every respect.

The first step was made at the recent show when a special program for refiners and marketers was arranged. The request for space was so great, although the plan was not decided upon until only a short time before the show opened, that the committee decided to prepare a fitting exhibition place for that branch of the industry for the next show.

The new structure will be modeled along the lines of the Texas and Oklahoma buildings and will be 60 feet wide and 240 feet long, fully equipped with a steel-glass skylight ventilator system.

Among other improvements planned before the 1930 show are the construction of a cafeteria building just south of the Scientific and Technical building, extensive additions to the Administration building, and a large and conveniently located structure where refreshments will be dispensed.

The cafeteria building will be of brick veneer with a small annex for the kitchen department. The exposition officials just prior to the 1929 show purchased complete kitchen equipment.

The dates for the exposition have been set for Oct. 4 to 11. No show will be held in 1931, but in 1932 the Exposition will be held in May along with the Natural Gas division of the American Gas Association meeting in Tulsa. The election of officers and directors will be Jan. 14.

Oil Burner Convention in April

NEW YORK, Dec. 23.—The seventh annual convention of the American Oil Burner Association will be held at the Hotel Stevens, Chicago from April 7 to 12. The National Oil Burner Show will be held in connection with the convention. Up to Dec. 12 some 60 manufacturers had engaged space for exhibits.

Shell Buys Largest Chain in Akron

CLEVELAND, Dec. 21.—Purchase of the Akron Oil Co. this week by the Shell Petroleum Corp. for $850,000 gives the Shell the largest number of company owned outlets in Akron and vicinity.

Akron Oil Co. had a bulk plant with tankage for 500,000 gallons of gasoline and 60,000 gallons of lubricating oils, and 33 drive-in service stations some of which had enclosed lubrication facilities. Shell had a bulk plant and two service stations besides numerous dealer accounts before it acquired the Akron company.

The Akron Oil Co. was formed about six years ago to acquire the storage plant and office building of the Akron Oil Refining Co. which also had a small cracking plant. The refining company had failed and its property was sold for $91,000. Some new capital was added but a large part of the property that now goes to Shell represents invested earnings of the Akron Oil Co. under the management of R. C. Witwer, president, and J. D. Haire, general manager.

The Akron Oil Co. had specialized in sales of motor oils and its ratio of oil sales to gasoline sales was 5 to 100, as compared with a national average of 3 gallons to 100. The company had its own brand, Velvet, and Veedol and Oak.

Costs 9½ Cents Per $100 To Collect Gas Tax

JACKSON, Miss., Dec. 20.—The gasoline tax was the largest source of revenue in Mississippi in the past biennium, so State Auditor Carl C. White said in his report to the legislature recently.

Total income from gasoline tax was $12,434,000, the report said. Cost of collection was 9½ cents per $100. "So far as we know, there is not a department of state in Mississippi, no state in the union, and neither is the federal government collecting any revenue on as small per cent cost to the state as this," said the report in pointing with pride.

Minor changes in the gasoline tax law were urged in the auditor's report. It recommended that the word gasoline be changed to motor fuel. At present the tax covers "gasoline substitutes or any volatile substance capable of being used in motor vehicles" but the law requires public carriers to report receipts of gasoline only.

The law now allows the dealer 3 per cent for evaporation and spillage, and the report urged that the law should include something about shrinkage.

It recommended that a reciprocal law be adopted requiring the state auditor to report to all adjoining states the amount of gasoline reported by dealers sold in other states.

The section of the report covering gasoline was sent out as a bulletin by the Mississippi Oil Men's Association.

Gulf to Build Refinery On Staten Island

CLEVELAND, Dec. 23—Work on the new 2,000,000-barrel storage and distributing plant of the Gulf Refining Co. on Staten Island, New York, is practically completed. The plant is at present used as a storage depot by the company to handle the large shipments of petroleum products and crude oil from the company's producing fields and refineries.

The plant consists of 24 tanks of 80,000 barrels capacity each, or a total storage capacity of 1,920,000 barrels. The field is completely equipped with pumping facilities, pipe lines, and so on. A modern Foamite system, with auxiliary drainage ditches and separators has been installed.

The wharf, where tankers of the company's fleet will discharge cargoes of crude and refined products, is of the crib type, and 345 feet long. The depth of water is 32 feet at mean low tide, giving water sufficient to dock the largest tankers.

While the plant is to be used for storage purposes under present conditions, it is understood that, as soon as railroad facilities can be made available at this site, the Gulf company intends to begin construction of a refinery. The additional refinery capacity is needed in order to care for the increased demand for the company's refined products in the eastern part of the country. No details of the projected plant have been announced yet, but the information may be expected as soon as arrangements are made for beginning construction.

Conservation Holds Back 10,000,000 Barrels

NEW YORK, Dec. 21.—At least 10,000,000 barrels of crude oil that would have been produced otherwise, have been kept in the ground, due to the conservation movement of the past year or so, E. B. Reeser, president of the American Petroleum Institute, has written in a statement on our industry for publication in business and industrial reviews of 1929.

"Conservation policies adopted a year or more ago are generally conceded to have gone far toward the stabilization of the petroleum industry," he said.

"More than 5000 refining companies, marketing companies and individuals engaged in the distribution of petroleum products have signed the national code of practices for marketing refined petroleum products. This is tending to correct many of the abuses in the marketing division and will, undoubtedly, assist in putting the selling end of the oil business on an ethical plane. The interest of the public, as well as the industry, will be served better as a result of the code.

"The refining department, as indicated by the figures compiled by the Bureau of Mines, has not, as yet, taken advantage of a great opportunity to complete the cycle in the conservation of petroleum products. Leaders realize the wasteful practices of present refinery operations. Stocks of gasoline, for instance, are twice as much as they should be. I look forward to an early correction in this phase of the petroleum industry and believe that 1930 will be a more prosperous year for the entire industry than 1929."

Elect Larry Bowman Head Of Seminole Group

TULSA, Dec. 20.—Officers of the Seminole chapter of the American Petroleum Institute Division of Production are Larry Bowman, Carter Oil Co., chairman, to succeed Herbert Shaffer, Pure Oil Co.; C. V. Sidwell, Amerada, secretary, to succeed H. B. Thompson, I.T.I.O. The election was at the regular meeting Dec. 17, at Shawnee. A feature was the banquet at the Hilton Phillips hotel.

Gulf Co. Announces Alchlor Prices

CLEVELAND, Dec. 23.—The Gulf Refining Co. announces the following schedule of prices on anhydrous aluminum chloride, f.o.b. plant at Port Arthur, Texas, terms net, cost of containers to be billed extra:

Shipments		Prices
up to	150 lbs	20c per lb.
200 lbs. to	333 "	15c " "
500 " "	900 "	10c " "
1,000 " "	3,550 "	9c " "
4,000 " "	8,750 "	8c " "
10,000 " "	17,200 "	7c " "
20,000 " "	33,300 "	6c " "
40,000 " "	and up	5c " "

Prices of containers are 55-gallon drums (about 550 pounds aluminum chloride), $3.00; 30-gallon drums (about 300 pounds aluminum chloride), $2.25; 100-pound drums (about 140 pounds aluminum chloride), $1.50.

The company announces also that as yet no other companies have been licensed to use the McAfee process for the conversion of hydrocarbons, employing aluminum chloride as conversion reagent, and it is not yet known just when such licenses may be granted.

Oklahoma City Continues to Complete Wells of Huge Production

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Dec. 21

OKLAHOMA CITY again occupied the center of the producing stage in the Mid-Continent. In fact, it occupied the wings as well as the center, for the usual pre-holiday dullness prevailed in other areas, distinctive this year because it was a continuation of the dullness that has been on hand for several months.

Nobody is doing anything out of the ordinary, except at Oklahoma City and there isn't even a subject any more to start an argument over.

Three more of those whopping wells characterized the Oklahoma City pool's history of the week, none adding to the defined territory. One of these was the Indian Territory Illuminating Oil Co. and Foster Petroleum Co.'s No. 2 Verne, NE SW SE of 13-11-3W.

It was drilled to total depth of 6535 feet, 467 feet in the Arbuckle lime (Siliceous) and in 24 hours it made 30,833 barrels. It was then shut in because of the proration rules in effect and will be held in that condition for several weeks, paying all the penalties that are imposed on new wells.

It is an offset to the north to T. B. Slick's No. 2 Glidden, which was an indifferent well and is a diagonal offset northwest to the I.T.I.O. and Foster's No. 1 Thomas Fuzzell, the largest well in the field.

Another big one was the Coline Oil Co.'s No. 2 Warren, NW SW of 18-11-2W. The Arbuckle lime was topped at 6045 feet and the well drilled to total depth of 6545 feet. It made 25,454 barrels in 22 hours and was shut in under the proration rules. It also offsets production, Mid-Kansas Oil & Gas Co.'s No. 1 Browning being the next location north. The Warren well was showing five to seven per cent of water when shut in.

The third big well of the week was the T. B. Slick No. 1 Zeckerle in the NW NE 13-11N-3W drilled on a three and one half acre lease. It came in for 1000 barrels an hour from the siliceous lime at a total depth of 6550 feet. Although not offset by production, the well does not really extend the proven area as it is in the general neighborhood of several other large lime wells.

One of those freaks for which no explanation has yet been developed turned up in the I.T.I.O. and Foster's No. 1 Williamson-Canfield, in the center SE SE SW of 24-11-3W. Producing from the so-called detrital zone, which overlies the eroded surface of the Siliceous, at 6291-6304 feet, the well made 92 million feet of gas and 178 barrels of gasoline of zero temperature. Tested at this temperature, or lack thereof, it showed a gravity of 63.30 A.P.I. scale.

It is a north offset to the same interests and Wirt Franklin Petroleum Corp's No. 1 Bertha Johnson, a "sand" well, completed several weeks ago for large initial production.

An early producer in the pool made its first water showing the middle of the week. Mid-Kansas Oil & Gas Co.'s No. 1 Fortson, C SW NE of 24-11-3, in the older part of the pool, made 904 barrels oil and one per cent water during the 24 hours ended the morning of Dec. 19.

The field now has 55 wells classed as producers, with a number of them shut in to comply with proration order. The problem of proration is getting to be a big one and operators started holding meetings this week to decide what to do after Jan. 1. No one can make up his mind that the present method of shutting in approximately half of the wells for five days while the other half produces is the ideal method, yet most everybody is afraid to try percentage proration.

IN VIEW of the big potential that is being built up through completion of new wells it is going to be a sizable job to hold production to desired limits by the present method. An early decision as to the form of restriction is to be made, as it must be ready to be put into operation in a little more than a week from now.

The old Seminole territory continues to go its routine way. One test that has been closely watched apparently is a failure. Gypsy Oil Co. carried its No. 9 Barkus, NW SW SW of 6-8-6, Mission pool, to the Siliceous lime and at last reports it was drilling at 5,400 feet with 5,000 feet of water in the hole. Had it found the deeper pay it sought it would have meant something of a redrilling campaign in the district.

Noble county, long quiet, got into the news during the week with a showing in the Peerless Oil & Gas Co. and others, No. 1 Wentz, NW SW of 22-22-1E, northeast of Perry, Okla., in the Otoe Indian country. It had a sand described by some as the Layton and by others as something in the Tonkawa series, at 3,279 feet and at three feet in it filled up 2,500 feet with oil.

Six-inch pipe was being set as this is written after which production test was to be made. The well tests a fair scope of territory, the nearest dry hole being a mile and a half east. This is 4,600 feet deep. The well is on a block of pooled acreage with the Peerless, headed by Vernon F. Taylor, of Indiana, Pa., operating.

KANSAS' principal contribution to production was the Shell Petroleum Corp.'s No. 1 Miller, SW SE of 1-20-2W, McPherson county. Top of the chat formation which produces so persistently and usually so poorly throughout central Kansas was found at 2,945 feet and the pay was found at 2,964-65 feet.

The well flowed 450 barrels the first hour and in the first three hours made 2,000 barrels. It is producing against back pressure and making around 3,200 barrels daily. It is in the Ritz pool and adds little to new territory, being chiefly remarkable for its size.

The old Ripley pool in Lincoln county, Okla., was the scene of a good completion. Mul-Berry Oil Co.'s well in the SW NW NW of 5-17-4E found the Wilcox at 4,115 and drilled in 42 feet. It made 612 barrels in 24 hours.

Now that the East Earlsboro pool is pretty well outlined the chief spot of interest is the Little River and East Little River area where production in the Cromwell sand promises to be of fair volume. Operators during the week set up a working arrangement so as to hold back the drilling campaign that was threatened.

It centers around the Mid-Continent Petroleum Corp.'s No. 13 well, in the SE NW SE of 5-7-7, completed early in November in the Cromwell sand at 3,200 feet for 2,600 barrels. Two other wells with imposing production have been completed in this formation in the same township.

The agreement provides for the shutting in of the wells until the area is opened for development, when the Mid-Continent's two wells are to have discovery rights. The area will be opened to production upon any one of the several operators who have leases in the area giving 10 days notice to the others.

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—after most joints are in the junk pile

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FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

SOME excellent hair splitting in constructing the tax laws has been done by an assistant attorney general of Oklahoma. He holds that derricks and equipment on locations not yet producing oil on Jan. 1 in the Oklahoma City field are subject to ad valorem taxation. Oklahoma has a three per cent gross production tax law which is a tax in lieu of all other taxes. The law is rather restrictive in language, exempting equipment used in the production of oil. The attorney general's assistant says this means that equipment which is not actually being used in producing oil on the first day of the calendar year does not take the exemption.

For years such equipment as casing on a lease that was not in use has been taxed. The state is carrying the principle a step farther. A derrick and all that goes along with it is taxable if the operator is not fortunate enough to have reached the sand on Jan. 1, even though the well comes in the next day.

State tax authorities are ever vigilant in chiseling out the final dollar. The federal government has, from time to time, reduced income taxes since the war but there has been no gain to the people. State and county agencies promptly add enough on to take up the slack.

At the moment Kansas presents the most serious problem to the oil industry. The tax code commission appointed some months ago by the governor has made its report. We have not yet seen this but folks who have tell us that it carries the recommendation that a gross production tax of 2 per cent be levied on oil.

That is not to be, as in Oklahoma, in lieu of other taxes. It is merely to take away from the producer 2 per cent of his gross income and on many hundreds of the little wells in the old fields of the state that is more than the profit. The legislature of the state, of course, will have to pass upon this proposal and it may be that it will listen more attentively to the oil men than did the tax commission.

* * *

It will be some months before the town of Oxford, Kans., knows whether it is rolling in wealth. Recently the police judge in the little oil center started fining the very devil out of operators for violation of an ordinance restricting drilling within the corporate limits. The ordinance went up to the Supreme Court of the United States and was upheld.

Several operators who had gone ahead with their wells pending the outcome of the litigation were cited and preposterous fines were meted out. One of them amounted, at $100 per day, to better than $82,000. Of course no such sums will be paid without a battle to the highest courts.

* * *

Recipe for figuring the income of an oil man: Take $100,000,000 as the base sum which he probably is worth. No proof is required, as he doubtless does little talking about his wealth. Then assume that he gets 6 per cent on this amount—well, to be conservative, say five. After erasing the figures a few times and wondering whether you have it "pointed off" correctly, his income emerges into the realm of fact. He will be drawing down a neat five million per year.

Such was the method employed in newspapers the country over recently in giving H. F. Sinclair a proper rating. It was a skillful piece of work.

Earl A. Trager is chief geologist of the Skelly Oil Co. He was one time with the old Marland Oil Co. and later associated with Earl Oliver, of Ponca City. A larger personnel of the Skelly geological department has resulted the past two years from the increase in scope of company operations

* * *

Dissolution of the drilling and producing firm of Davis & Aylward, Wichita, has been announced. J. A. Aylward has taken over the firm's tools in Texas and Mr. Davis will operate the producing properties in Kansas and the drilling tools running in that state. The partnership was formed 13 years ago.

* * *

D. J. A. Shaw, secretary of the Colcote-Shaw Oil Co., Shreveport, has been appointed director of the minerals division of the Louisiana department of conservation. He succeeds W. F. Chisholm, resigned. Capt. R. P. Webb was restored to the position of inspector of gas and minerals in the Monroe field office. He left that place some 17 months ago.

* * *

Petty pilfering, and sometimes pilfering on a larger scale, always is troublesome to oil companies. The Mid-Continent Oil & Gas Association has been effective in checking theft of material. In Louisiana and Arkansas, 19 persons were sentenced by the courts for committing oil field thefts, Joseph B. Elam, secretary of the divisional association, reported in his annual summary of activities. Five rewards of $100 each were paid by the association for information which led to the arrest and conviction of thieves and considerable property was recovered.

* * *

Sightseeing in the Rockies by airplane makes big advances the past summer. It is reported that 16,000 tourists saw the Grand Canyon from the air in the ships of Scenic Airways. The service operates from Santa Fe and trips are made both to the canyon and to the parks of southern Utah. A new line will be opened from Nogales

to Salt Lake City. Scenic Airways operates 21 planes.

* * *

"Almost any fool can start a new religion," says Editor A. J. Hazlett, in his Inland Oil Index, Casper, Wyo. "It is not even necessary to be crazy. All that one needs to do is to let his hair and whiskers grow and introduce some sort of ridiculous sex ideas."

To which Ellick Botts, popular ex-pumper of the Gray Horse district retorts, out of the recollections of a colorful life, that all sex ideas are ridiculous.

* * *

J. K. Murphy has resigned from the geological staff of the Independent Oil & Gas Co. to go with the Homestake Oil & Gas Co. and the Homestake Royalty Corp., of Tulsa. He spent four years with the Independent and prior to that had been with the Josey Oil Co. The Homestake companies are headed by J. R. Simpson, son-in-law of the late O. D. Strother who owned in fee some of the best oil producing tracts in the original Seminole pool.

* * *

News comes in from R. A. (Berry) Griffith, president of the Sinclair Oil & Gas Co., that he is enjoying quite good health again. He left Tulsa some weeks ago for San Diego, Calif., to recuperate. Nothing serious; he merely went back to work in the middle of an attack of "flu" last summer and nature wouldn't stand for it.

* * *

The Wiser Oil Co. has promoted Carl Tanner, foreman at Alluwe, Okla., to superintendent as of Jan. 1. He will maintain offices in Bartlesville, where H. G. Ellis, division manager, directs the company's mid-Continent operations.

* * *

Willard L. Day has been transferred by Delmar Oil Co. from Amarillo, where he had charge of land and geology, to San Antonio. He will head the new division office that has been opened there. Thad Hoke has been transferred from Medicine Lodge, Kans., to Amarillo. The Delmar is a subsidiary of the Indian Territory Illuminating Oil Co.

* * *

W. S. (Buck) Morris moved over from the Bureau of Mines station at Bartlesville the other day to the Indian Territory Illuminating Oil Co.

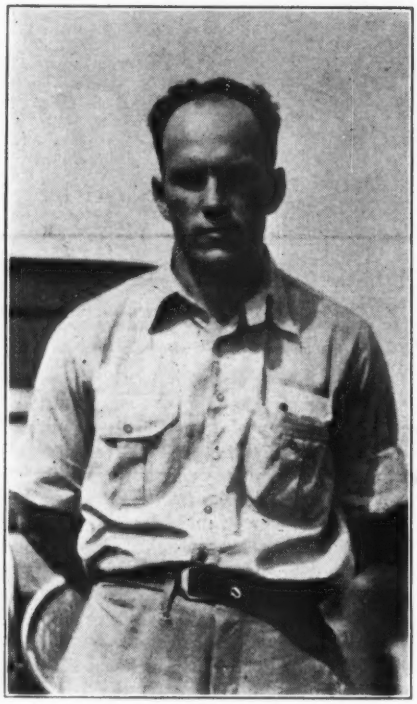
His work for the past three years has been chiefly in the Seminole district. The final engineering report on the district, made by Mr. Morris and others, is soon to be published.

* * *

Died: In Fort Worth, W. W. Donnelly, president of the Federal Supply Co. His brothers, R. D. and Arthur, of Tulsa, are oil producers.

* * *

J. George Wright, superintendent of the Osage Indian agency, has been notified that, according to his request, he will be permitted to continue as superintendent for two more years. He will reach the civil service retirement age of 70 on Jan. 8. His application for the two-year extension permitted under the rules had the full support of the Osage tribal council.



W. W. Clawson is one of those persons who isn't always "in" to visitors. But when one has to keep a weather eye out for the details of more than 100 wells, he doesn't always have the time to engage in light conversation. Mr. Clawson is division geologist at Oklahoma City for the Indian Territory Illuminating Oil Co. He has had the advantage of some foreign experience and considerable work in the Mid-Continent

Superintendent Wright has been in Indian service since 1883 and in the Osage agency since 1916. He was one time commissioner of the Five Civilized Tribes. In the Osage agency he has supervised the administration of oil lands during the period of their richest development and has had charge of distribution of more than $235,000,000 to his charges. He is popular alike with oil men and Indians.

* * *

G. R. Henson, exploitation engineer in the Tulsa office of the Shell Petroleum Corp. is leaving about Jan. 10 for a two months' observation trip of the company's home offices at The Hague, and in England. The trip will also include a visit to some of the European fields. Mrs. Henson will accompany him.

* * *

Stockholders of the Deep Oil Development Co., Wichita Falls, have chosen N. H. Martin, Wichita Falls, as president and Frank Kell, also of Wichita Falls, chairman of the board of directors. This company is a co-operative one, organized to drill and promote the drilling of deep tests in the several counties of north Texas where shallow sand production is now found. A board of directors of 22 members has been elected and the one million dollars capital stock has been nearly three-fourths subscribed.

* * *

The Empire Companies are completing an airport just west of Bartlesville on a tract of 400 acres. The runways have been laid out and a 60 by 60-foot hangar is nearly finished. The companies have, as the beginning of their air fleet, a large Boeing biplane.

* * *

Died: Near Blackwell, Okla., in automobile crash, J. A. Tope, of Ponca City, drilling contractor.

* * *

The Shreveport division office of the Atlantic Oil Producing Co. will be discontinued Jan. 1 and W. C. Coolidge, division manager will go to Dallas as assistant to E. H. Blum, vice-president. The division scouting department, C. A. Strahan in charge, will be maintained in Shreveport and the district operating office will continue as at present in El Dorado, Ark. Other Shreveport office personnel will be transferred to various points in Texas.

* * *

Ten Years Ago

(From National Petroleum News, Dec. 31, 1919)

Pennsylvania crude advanced to $4.75 per barrel and Mid-Continent grade goes to $2.75.

Burkburnett declines to point where pipe lines can nearly handle all of the production.

Oklahoma field activities stimulated by price advances and daily output nears 250,000-barrel mark.

* * *

And a Happy New Year.

Federal Aid Roads Built in 1928

WASHINGTON, Dec. 19.—Complete statistics for the United States for the calendar year 1928 covering all roads constructed by federal, state, and local agencies, compiled by the Bureau of Public Roads of the U. S. Department of Agriculture, indicate that federal aid has helped materially in the construction of the higher types of surfacings.

In the year a total of 74,783 miles of highways were improved, says the bureau. With state and federal funds and the cooperation of the U. S. Bureau of Public Roads, the states constructed 7814 miles of roads and 47 miles of bridges in the federal-aid system. With state funds alone the states improved 21,391 miles of state roads, and the counties and other local units constructed 45,531 miles of county and local roads.

Voluntary Efforts Fail to Hold Back Santa Fe Springs Output

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES, Dec. 19

THE California production situation presents anything but a placid view, as gas continues to flow unrestrained and increased oil production in one or two of the flush fields threatens to boost the state's daily average output above the 750,000 barrel mark.

Every effort is being made by the leaders of the oil industry, aided by Umpire Paul Grimm, to obtain the signature of operators at Santa Fe Springs to an agreement that will provide for an orderly and equitable method of placing upon production wells due to be completed in this critical field before Jan. 15.

Production at Santa Fe Springs was reported by the umpire's office to have been 185,188 barrels on Dec. 17, a decrease of only 2000 barrels from the field's output for the previous day.

The umpire estimates that 46 wells may be completed by Jan. 1, which would probably add from 30,000 to 40,000 barrels of flush production; and that if drilling is not curtailed immediately, production from this field may exceed 250,000 barrels daily next month.

In the agreement now being circulated among the operators at Santa Fe Springs for their approval it is provided that in the future drilling may be continued to the top of the sand from which the well is to produce, the casing being landed and cemented above the sand as usual; but no operator is to place any well on production unless he obtains the permission of the umpire.

At present the agreement is only in a tentative form and it is expected that numerous changes will have to be made before a majority of operators sign. One of the suggestions made provides that the umpire shall set potentials for new wells before they are brought in, rather than allow potentials to be based upon the initial production from the well.

In the past the object of the operators has been to obtain as high an initial potential as possible because the allowable production of a well is based upon its potential as indicated by the initial output. For this reason wells have been brought in through an unprotected hole for an initial production test after which the well has been killed and completed in the regular manner by running in tubing and liner.

Although there is some talk of a cut in the price of Santa Fe Springs crude oil as a result of the failure of operators to reduce the field's daily yield to 150,000 barrels, the umpire expects that production can be brought down to around 160,000 barrels daily.

The Wilshire interests have not as yet signified any intention to cooperate in any program for limiting production, but it has been decided to go ahead and obtain the cooperation of all other operators if possible.

The table below shows potential and allowable production at Santa Fe Springs for several of the larger companies during the period Dec. 15 to Dec. 31. The daily excess production by these companies during the first half of December is also shown. Figures are taken from the umpire's report as of Dec. 15.

Company	Potential Production (Bbls. per day)	Allowable Production B/D	Excess Production B/D
Associated	9174	5126	778*
General Petroleum	56,965	24,475	1521
Getty, Geo. F.	32,482	11,622	3771
Richfield Oil Co.	9020	4448	174*
Shell Oil Co.	19,473	8935	293
Standard Oil Co.	29,646	14,064	15*
The Texas Co.	27,877	13,548	337*
Union Oil Co.	47,043	21,940	354
Universal Cons.	6133	2327	579
Wilshire Oil Co.	21,262	8394**	18,470

*Under production

**Amount of excess production in period Nov. 16-30 which the allotted production for period Dec. 1-15 cannot balance.

Signal Hill

Completion by the Apex Petroleum Co. of its Marine 16-A at Signal Hill for an initial production of 2200 barrels from a depth of 7938 feet aroused considerable interest in local circles.

The well, near the center of activity shows a greater production than other wells recently completed around it. It came in while the tubing was being run and with a tubing pressure of 200 pounds and a casing pressure of 1075 pounds.

Although the well was first brought in through a bean this had to be discarded when the casing pressure exceeded 1500 pounds. It is estimated that the well is making less than 2 million cubic feet of gas, coming easily within the oil-to-gas ratio suggested by the state oil and gas supervisor in his order for Signal Hill.

Elwood

With drilling operations at Elwood practically suspended the production situation in this field is not expected to present any further difficulties. Operators succeeded in reducing the daily output from 41,000 barrels to less than 36,000 barrels in a week and expect to have it curtailed to the desired figure of 30,000 barrels within the coming week or at least by the first of the year.

General Petroleum Corp. has commenced work on its tideland permits on the coast near its More ranch wildcat. The first well, Bank 1, is now drilling below the 200 foot level and work on two other projects in this area will be commenced soon after the first of the year. The company will use natural gas from its More 1, which blew in several months ago as a gasser, to furnish power for drilling operations. Company executives are optimistic over the possibilities of finding an oil field on this property, which is approximately five miles southeast of Elwood.

Numerous other wildcats in the coastal region above Ventura Avenue are drilling ahead with only meager reports being released on the findings in the core barrels.

Signal Oil and Gas Co. completed its Wallace 4 on Sec. 8, 11-23 at Maricopa Flats for an initial production of 1200 barrels of 27 gravity oil from 2685 feet. The well, completed on the same section as that of Doyle Petroleum Co., is flowing barefoot through 8¼-inch casing. Because of the caving nature of the sand, it is expected that tubing and liner will be run during the coming week to prevent the well's sanding up.

Standard Oil Co. and Shell Oil Co. are drilling ahead in their deep tests of the Midway district. The Standard is below 7900 feet in its Mascot 1 on Sec. 26, 32-23, with nine-inch pipe set at 6350 feet. Shell's Perris 1A on Sec. 15, 32-23 is below 7560 feet in hard sand.

TITUSVILLE, Pa., Dec. 19.—The death recently of Eric J. Wilson here, recalls the fact that his uncle Samuel Wilson, a Titusville druggist in the 1850's, signed a note for Col. Edwin L. Drake when the latter was out of funds, enabling him to complete successfully the drilling of the first oil well in 1859.

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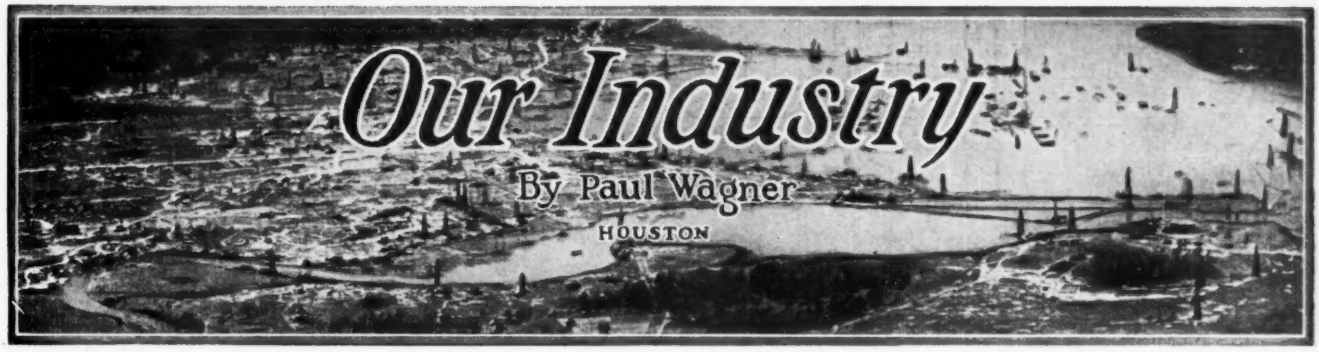


THE Canadian subsidiary of the Continental Oil Co. of Delaware, Ponca City, is now known as the Hudson's Bay Oil & Gas Co. When originally formed several years ago as an arm of the old Marland Oil Co. of Delaware, it was known corporately as the Hudson's Bay Marland Co.

R. Van A. Mills, vice president and general manager, formerly of the United States Bureau of Mines, succeeded Glen M. Rubey as its operating executive at Winnipeg. Mr. Rubey, as previously recorded in this periodical, is now president of the Nordon Corp., Ltd., a Canadian corporation engaged in exploratory work along the Rocky Mountain front in Canada.

A number of other corporate styles appear changed in the Continental setup since the consolidation of the Continental Oil Co. of Maine and the Marland Oil Co. of Delaware into the newer Continental Oil Co. of Delaware earlier in the present year.

Operations in Mexico are carried forward through the Consolidated Oil Companies of Mexico, which was already in existence but previously was a subsidiary of the old Marland Oil Co. of Mexico, S. A. Its vice president and general manager is P. Messenger.

The marine department is operated through a subsidiary known as the Continental Steamship Co., Baltimore, with Garnet Hulings as vice president and general manager; J. R. Alexander, Baltimore, superintendent of terminals. Marine equipment was acquired by the Continental in the deal whereby it took over Prudential Oil Corp. properties on the Atlantic seaboard last spring.

Sealand Petroleum Co., Ltd., through which foreign sales are handled at London, is in charge of Alfred V. Sale as managing director.

* * *

The Union Oil Bulletin, house organ of the Union Oil Co. of California, Los Angeles, pulls the latest Scotch joke at the expense of William Groundwater, manager of that corporation's transportation department. It follows:

"Everyone has noticed that the Scotch are invariably good golfers, but to William Groundwater goes the credit for the first satisfactory explanation of the fact. It's quite simple—the fewer times the ball is hit the longer it lasts."

* * *

G. M. Depuy, in charge of the Mexican Gulf Oil Co.'s production department at Tampico, returned to headquarters late in November after a five weeks' vacation spent in Oklahoma and Texas.

* * *

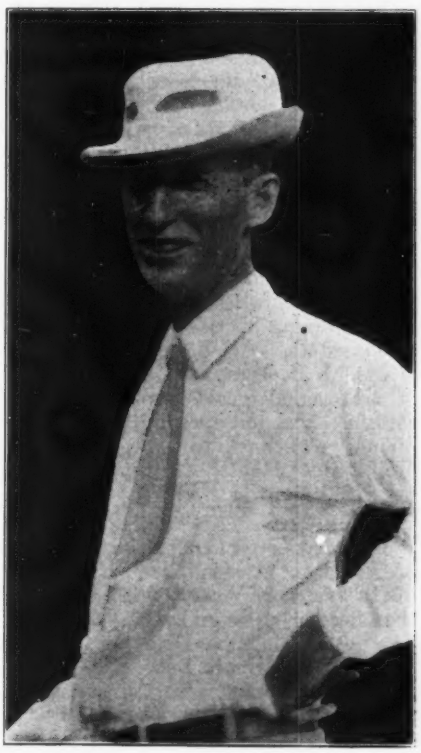
C. W. Tackman, treasurer of the Penn-Mex Fuel Co., in the Tuxpam region of Mexico, is spending a two months' vacation in the United States.

* * *

M. D. Bryant, long a drilling contractor in the early development days of the West Texas Permian salt basin region, is now president of the Western Oil & Royalty Co., at San Angelo.

* * *

Frank S. Carothers, manager of the Norvell-Wilder Hardware Co., at Houston, a well known oil field supply salesman in Gulf Coastal territory, has made a reputation as an oil country humorist and is in wide demand as an after-dinner speaker.



Frank S. Carothers

* * *

H. B. Swetland, purchasing agent of the East Coast Oil Co. of Mexico, S. A., Southern Pacific subsidiary, at Tampico, is recovering from a recent attack of pleurisy.

* * *

Walter Nelson is production superintendent of the Taylor-Link Oil Co., in the Girvin area of Pecos county, West Texas. He makes headquarters at Fort Stockton. Mr. Nelson was formerly with the Federal Petroleum Co., a J. S. Cullinan group company, at El Dorado, Arkansas.

* * *

H. E. Ozenberger of the Empire Oil & Refining Co., a Cities Service subsidiary, is now at Muskegon, Mich., in the land and scouting departments. He was recently transferred from the Wichita, Kan., territory.

* * *

Whenever one finds Mark McLaughlin missing from the executive floor of the Magnolia Petroleum Co.'s skyscraper building at Dallas he may be allowed just one guess as to that gentleman's whereabouts. Mr. McLaughlin then may be found at the golf links. Chances are, and the statement may be taken as meaning "more than probable," he will be accompanied by E. P. Angus, sales department vice president, and W. H. (Bill) Francis, vice president and general counsel, together with some fourth golfer.

* * *

Dallas Foster, formerly of the Wichita Falls district geological department of the Gulf Production Co., has been transferred to Maracaibo, where he will be identified with exploratory work of the Venezuela Gulf Oil Co.

* * *

W. H. Spice, who went to Venezuela after his resignation from the old Marland Oil Co. of Texas several years ago, is now assistant chief geologist of the Lago Petroleum Co., a subsidiary of Pan American Petroleum & Transport Co., at Maracaibo. He was in charge of the Marland district office at San Antonio before going to Venezuela.

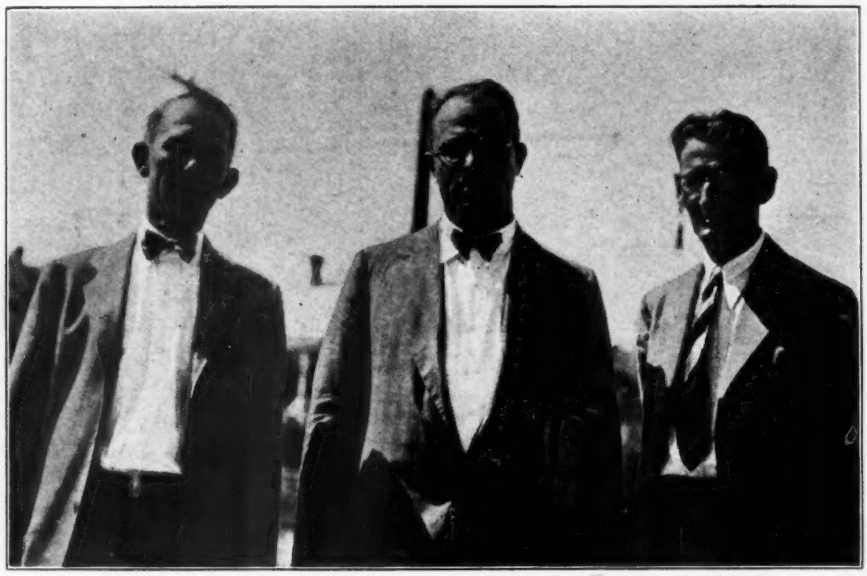
Two of the three individuals shown in an accompanying group picture are connected with Safety work of the Humble Oil & Refining Co., at Houston. They are R. B. Roaper, left, who heads this work generally for the Humble, and V. H. Hayslip, right, Safety engineer in Gulf Coastal territory. The individual in the center is S. W. Oberg, chief civil engineer of the Humble.

* * *

Charles Goodson is now scouting North Louisiana territory for the Dixie Oil Co., Inc., direct producing subsidiary of Standard Oil Co. of Indiana. He was recently transferred from Tulsa to Shreveport.

* * *

"Turk" Burleston, formerly of Cisco, has been transferred to the Wichita Falls district by the Simms Oil Co., succeeding "Pete" Johnson, transferred to Tyler, East Texas, after the Pure Oil Co. drilled its recent Van Zandt county discovery well.



Left to right, R. B. Roaper, S. W. Oberg and V. H. Hayslip

Sidney Powers

Sidney Powers, consulting geologist to the Amerada Petroleum Corp., Tulsa, has been identified with that organization since 1919, when he became its chief geologist. Previously, he had served as a geologic officer in the American Expeditionary Forces in 1918. Before that he was at Shreveport for the Producers Oil Co., in parts of 1916-1917, when that corporation was in effect the producing department of The Texas Co. In the interim, after leaving The Texas Co., and before joining the A.E.F., Mr. Powers was assistant geologist on the United States Geological Survey in parts of 1917-1918.

Mr. Powers is a fellow of the Geological Society of America. He also holds membership in the American Association of Petroleum Geologists and the American Institute of Mining & Metallurgical Engineers. He is the author of many publications disseminated through the organizations mentioned and through the Journal of Geology. He is a native of Troy, New York, got his B.A. from Williams College in 1911, his S.M. from the Massachusetts Institute of Technology in 1913, his M.A., and Ph.D. from Harvard in 1915.

* * *

Bulletin 806 of the United States Geological Survey, entitled "Contributions to Economic Geology, 1928," just off the government press at Washington, contains among other papers a comprehensive discussion of geology and oil and gas prospects of the San Rafael Swell, Utah, by James Gilully. The discussion deals with an area covering 1483 square miles in Emery county and northern Wayne county, Utah. After discussing geography, topography and stratigraphy, the author deals with the economic geology of the region and gives data on three deep test wells drilled there unsuccessfully.

In another paper appearing in Bulletin 806, the Rock Creek Oil field and adjoining areas of Wyoming are discussed by C. E. Dobbin, H. W. Hoots, C. H. Dane and E. T. Hancock of the geological survey. Thrust faulting and oil possibilities in the plains adjacent to the Highwood Mountains, Montana, are dealt with by Frank Reeves.

* * *

John M. Vetter, consulting geologist of Houston, is a member of the firm of Bowman & Vetter, with offices in the Second National Bank building. The other member of the firm is Wayne F. Bowman. Both Messrs. Vetter and Bowman were formerly connected with the Rio Bravo Oil Co., Southern Pacific subsidiary at Houston.

Mr. Vetter was in charge of the Rio Bravo's land department at the time of his resignation about two years ago to enter business for himself. Mr. Bowman had previously left the company's geological department.

* * *

T. O. Matkins, formerly with the Superior Oil Co. in southeastern New Mexico, is making headquarters at Fort Stockton while scouting the southern part of the West Texas Permian basin region for Empire Gas & Fuel Co. He succeeded W. F. Bowser, who recently resigned to join the West Texas organization of the Tidal Oil Co.

John M. Vetter

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Completions in Oklahoma and Kansas, Week Ended December 21, 1929

OKLAHOMA

Caddo County

Company	Well No.	Location	Depth	Init. Prod.
Franklin	1	SW NW NW 4-5-9 W	T.D. 5855	Dry

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Porter-Monahan	1	SEc NW 23-3-4 W	T.D. 3513	Dry
Magnolia	2	NEc SW 30-1-3 W	2577-2697	160
Smith	3	NW SE NE 27-2-3 W	3449-3965	8M

Cotton County

Company	Well No.	Location	Depth	Init. Prod.
Razor-Aikens	3	SEc SW 35-1-10 W	2134-2169	170
Shasta	1	NWc SE 1-2-10 W	2232-2237	30

Creek County

Company	Well No.	Location	Depth	Init. Prod.
Bailey et al	4	NW SW SW 21-18-9 E	2545-2640	8
Ted Ray Oil Co.	1	SW NE NE 13-17-10 E	2246-2260	3M
Reiter-Foster	2	CSL SW SE 17-17-10 E	2109-2147	18
Wilson	6	NE NW NW 35-17-10 E	1690-1710	3M

Hughes County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	1	NE NW SW 8-6-8 E	2790-2825	25
Superior et al	2	NW SE SE 4-8-9 E	3350-3375	15

Jefferson County

Company	Well No.	Location	Depth	Init. Prod.
Beck	4	SWc NE SW SE 34-6-5 W	1202-1218	80

Kiowa County

Company	Well No.	Location	Depth	Init. Prod.
Russell-Sloan	1	NW SE NE 30-7-16 W	T.D. 703	Dry

Logan County

Company	Well No.	Location	Depth	Init. Prod.
Shell	2	NE SE SW 30-19-4 W	5953-5983	1430

Marshall County

Company	Well No.	Location	Depth	Init. Prod.
Goddard	2	SW SW SW 13-5-5 E	561-598	120
Westheimer	1	SW SE NW 30-5-6 E	549-558	45

McIntosh County

Company	Well No.	Location	Depth	Init. Prod.
Weible	1	NEc 2-11-18 E	T.D. 905	Dry

Muskogee County

Company	Well No.	Location	Depth	Init. Prod.
Ray et al	1	SE SW SE 15-13-18 E	730-745	1½M

Okfuskee County

Company	Well No.	Location	Depth	Init. Prod.
Mid-Continent	2	SW NW NE 31-11-11 E	3006-3010	50
Moore et al	2	SWc NE 12-10-11 E	T.D. 2143	Dry

Oklahoma County

Company	Well No.	Location	Depth	Init. Prod.
I. T. I. O. et al	1	NEc NW 25-11-3 W	6330-6380	8355
I. T. I. O. et al	1	NE SW SE 24-11-3 W	6205-6630	910
Mid-Kansas	3	NWc NE 24-11-3 W	6184-6554	17166
I. T. I. O. et al	1	C NE SW 13-11-3 W	6293-6570	5809
Slick	1	SWc SE 13-11-3 W	6297-6535	17276
Slick	2	SE SW SE 13-11-3 W	6003-6662	2900
Sinclair	2	SWc NW 30-11-2 W	6375-6420	500 & 80M
Sinclair	3	SEc NW 30-11-2 W	6070-6555	3215 & 60M

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Kirkland-Son	2	NE SW NE 17-15-13 E	1990-2008	1M
Wallace	10	CNL SW NE 14-14-14 E	1083-1102	30
Pine	5	CEL NW SE 19-14-14 E	2484-2491	4M

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Peters	2	NW NE NW 27-27-11 E	1635-1658	75
Okla. Natural	1744	NE SW SW 5-21-12 E	873-882	.067M

Payne County

Company	Well No.	Location	Depth	Init. Prod.
Wheeler-Mote et al.	1	SE NW NW 7-17-5 E	T.D. 4212	Dry

Pittsburg County

Company	Well No.	Location	Depth	Init. Prod.
Midwestern	1	SEc SW NE 11-7-18 E	T.D. 1961	Dry

Pontotoc County

Company	Well No.	Location	Depth	Init. Prod.
Shaffer	1	C NW NE 36-5-7 E	T.D. 2933	Dry
Benedum-Trees	1	SWc SE 30-5-5 E	2603-2628	125
Empire	1	SW NE NE 19-5-5 E	2294-2309	10
Homaokla	6	NW SE SE 1-4-7 E	2014-2032	35

Pottawatomie County

Company	Well No.	Location	Depth	Init. Prod.
I. T. I. O.	1	SE SW SW 35-8-4 E	3748-3849	1210
Indep. et al	3	SW SE SE 16-7-4 E	4195-4238	185
Magnolia	2	SWc 15-7-4 E	4095-4099	375
I. T. I. O.	3	SW NE NW 2-7-4 E	3699-3856	695
Indep. et al	2	SE NW NW 2-7-4 E	3613-3933	210
Obermayer et al	1	NW NE NW 19-6-4 E	3655-3572	380
Continental	1	SW SE SE 10-7-3 E	4350-4479	310
I. T. I. O.	1	NWc 4-5-5 E	T.D. 3145	Dry
Darby	1	NW SW SE 22-7-4 E	T.D. 4276	Dry
Simms	1	CEL NW NW 19-6-4 E	T.D. 3849	Dry

Seminole County

Company	Well No.	Location	Depth	Init. Prod.
McCulloch et al	1	NWc SE 20-9-6 E	T.D. 4372	Dry
Magnolia	3	NEc 18-9-6 E	T.D. 4283	Dry
Continental et al	7	NW NE SW 4-7-7 E	T.D. 4390	Dry
Amerada et al	1	NWc SW 19-9-6 E	4111-4129	2760
Magnolia	4	SW NW SE 18-9-6 E	4350-4367	1147
Magnolia	1	SW NW NW 4-7-7 E	4155-4291	8
Amerada et al	1	SW SE NW 4-7-7 E	4262-4277	1440
Carter	1	NW NE SE 13-6-7 E	2800-2900	35M
Signal	5	SE SW NE 13-6-7 E	2786-2806	315
Pure	5	SW NE NE 13-6-7 E	4092-4120	1935
I. T. I. O.	1	NE NW SW 13-5-7 E	4276-4287	385

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
Franklin	3	NE SW NE 12-1-4 W	2589-3286	80
Franklin	1	NEc NW SW 9-2-6 W	3125-3138	40M

Tillman County

Company	Well No.	Location	Depth	Init. Prod.
Staley et al	1	NEc SE 25-4-14 W	T.D. 2320	Dry

Wagoner County

Company	Well No.	Location	Depth	Init. Prod.
Martin	1	NEc SE 27-18-15 E	T.D. 1103	Dry
Cherokee Public Service	2	SWc NE 36-16-17 E	T.D. 940	Dry
Union	1	NW NE NW 25-18-17 E	1035-1036	2½M

KANSAS

Butler County

Company	Well No.	Location	Depth	Init. Prod.
Empire	18	SW NE SW 19-26-5 E	2616-2687	60
White Eagle	1	NE NW SW 2-25-5 E	T.D. 3182	Dry
Walton	1	SWc NW 2-24-3 E	T.D. 2916	Dry

Cowley County

Company	Well No.	Location	Depth	Init. Prod.
Lewis Prod.-Empire	1	SW SE NE 30-31-6 E	2898-2930	30

Ellis County

Company	Well No.	Location	Depth	Init. Prod.
Phillips	1	NEc 19-12-17 W	3363-3368	300

Elk County

Company	Well No.	Location	Depth	Init. Prod.
Winemiller et al	2	SW NW SW 3-30-9 E	T.D. 2364	Dry

Greenwood County

Company	Well No.	Location	Depth	Init. Prod.
Derby et al	1	CSL SE SW 8-24-13 E	T.D. 1622	Dry
Independent	1	SW NW SE 36-24-10 E	T.D. 2079	Dry
Derby et al	3	C N½ SE NE 22-22-13 E	1805-1820	100

McPherson County

Company	Well No.	Location	Depth	Init. Prod.
McBride et al	2	SE NE NE 9-21-3 W	3305-3310	1770
Graham Bros. et al.	1	SE SW SW 30-18-2 W	T.D. 1460	Dry

Ness County

Company	Well No.	Location	Depth	Init. Prod.
Continental	1	NEc SE 7-18-25 W	4428-4431	185

Russell County

Company	Well No.	Location	Depth	Init. Prod.
Midwest Explor	31	SWc 4-14-15 W	3064-3086	140

Sedgwick County

Company	Well No.	Location	Depth	Init. Prod.
Fisher-Lauck et al.	1	NE SW SE 19-27-2 E	2927-2938	125

Sumner County

Company	Well No.	Location	Depth	Init. Prod.
Washoma et al	1	NWc SE 36-31-2 E	1933-1937	110

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended December 21, 1929

OKLAHOMA

Carter County

Company	Well No. & Farm	Location	
Ven-Mex	1-Dixon	SEc NW 30-1-3 W	OWD

Comanche County

Company	Well No. & Farm	Location	
Cooper	4-Hallum	CNL SE SW 3-3-10 W	

Cotton County

Company	Well No. & Farm	Location	
Barnsdall	17-Bills	NEc SW 33-1-10 W	
Franklin	2-McCombs	SEc NE SW 35-1-10 W	
Shasta	1	SWc NE 31-1-9 W	
Shasta	1-Whitehead	SWc NE 1-2-10 W	
Silurian et al	4-Chambers	NEc NW 2-2-10 W	

Creek County

Company	Well No. & Farm	Location	
Bartlett	5-Bartlett	SWc NE SW NE 18-19-9 E	
Mannford Dev	1-Barnett	SWc SE 11-18-8 E	
Bartlett	1-Jackson	SW SE SW 23-18-8 E	OWD
Shaffer et al	1	NEc SE 9-17-10 E	
Ice	5-Wanake	NEc SE NE SE 19-17-10 E	
Mays Drlg	1-Brown	NEc 20-17-10 E	

Grady County

Company	Well No. & Farm	Location	
Meridian	4-Short	CWL NE NW 36-4-8 W	
Meridian	5-Short	CWL NW NE 36-4-8 W	

Hughes County

Company	Well No. & Farm	Location	
Inglehart et al	1-Barnett	C NE SW 28-9-10 E	
Independent	1-Coker	C NW SW 12-7-8 E	

Kiowa County

Company	Well No. & Farm	Location	
Connor-Son	3-Geis	SEc SW NE 25-7-16 W	
Bridwell	2-Foster	NW SE NW 18-6-16 W	
Head et al	1-School	CWL NW 22-6-16 W	

Muskogee County

Company	Well No. & Farm	Location	
Bryan	2-Grayson	CWL SW NW 9-15-15 E	
Johnson et al	2-Smith	NWc SE SE 13-13-18 E	OWD
Mazda	5-Jackson	SWc NW SE NW 8-13-16 E	
Smith et al	2-Lewis	NEc SE NE 6-13-16 E	
Midwestern	2-Parker	C NW SW 31-12-19 E	

Okfuskee County

Company	Well No. & Farm	Location	
Betty	1-Harjo	NWc SE 5-12-11 E	
Minnehoma	3-Grayson	NWc NE SE 31-11-11 E	
Burr-Mack	1-Dindy	SEc NE NW 31-11-11 E	

Oklahoma County

Company	Well No. & Farm	Location	
Franklin	1-Wright	NEc NW 2-11-3 W	
I. T. I. O. et al	1-Trosper	NW SW NE 14-11-3 W	
I. T. I. O. et al	4-Johnson	NW NE NW 25-11-3 W	
I. T. I. O. et al	5-Johnson	NE NW NW 25-11-3 W	
Coline	4-Clauer	SW SE SE 25-11-3 W	
I. T. I. O. et al	3-Speegle	SE SW SW 24-11-3 W	
I. T. I. O. et al	2-Canfield	SW SE SW 24-11-3 W	
I. T. I. O.	2-Sudik	NWc SW 31-11-2 W	
I. T. I. O. et al	6-Jones	SW NW NW 31-11-2 W	

Okmulgee County

Company	Well No. & Farm	Location	
Eagle Pitcher	1-Morton	SWc 28-13-12 E	

Osage County

Company	Well No. & Farm	Location	
Peters	4	SW NE NW 27-27-11 E	
Stanley et al	1	NWc NE NE NE 15-26-8 E	
Continental et al	2	SE NE SW 22-24-7 E	
McCune-Wormser et al.	13	SWc SE SE NW 15-24-8 E	
Maxwell	6	NWc SE 5-24-11 E	

Pawnee County

Company	Well No. & Farm	Location	
Adamson	4-Parker	NE SW SE 24-21-7 E	
Thompson-Black	1-Fleming	SE NE SE 15-20-9 E	

Pontotoc County

Company	Well No. & Farm	Location	
Benedum-Trees	2-Malloy	SWc 30-5-5 E	
Benedum-Trees	8-Mole	NWc NE 31-5-5 E	

Pottawatomie County

Company	Well No. & Farm	Location	
Sykes	1-Townlot	NW SE NW 8-9-5 E	
Neal et al	1-Townlot	C SW NW 8-9-5 E	
Continental et al	2-Brandenburg	SW SE SE 34-8-4 E	
Independent et al	3-Weldfelt	NE SW NW 2-7-4 E	
Sinclair	1-Morgan	NEc SW 4-7-4 E	
Gypsy	1-Rose	NW SE NE 4-7-4 E	
Magnolia	2-Wyatt	SWc NE 4-7-4 E	
Magnolia	1-Wyatt	SE SW NE 4-7-4 E	
Pure	1-Duvall	NW NE SE 4-7-4 E	
Atlantic	1-McGee	NWc SE 4-7-4 E	
Independent	1-Larsh	SE SW SW 2-7-4 E	
Big Four Dev	1-Townlot	NWc SW 8-9-5 E	
Sinclair	4-Brandenburg	NW SW SW 7-7-5 E	

Seminole County

Company	Well No. & Farm	Location	
Continental	2-Maguire	SEc 24-9-5 E	
Amerada et al	1-Gates	NEc 25-9-5 E	
Amerada et al	3-Scott	NWc 30-9-6 E	
Tidal et al	4-Lasley	NE SW SE 19-9-6 E	
Turman	1-Phillips	SWc SE 8-9-6 E	
Mid-Continent	1-Tulsey	SEc 31-9-6 E	
Shell	1-Caeser	NW SE NE 11-7-6 E	
Gypsy	1-Factor	NWc 19-7-7 E	
Pure	8-Bates	SW SE NE 13-6-7 E	
Signal	6-Bond	NE SW NE 13-6-7 E	
Sinclair	3-Thompson	NE SE SW 18-9-7 E	

(Continued on Page 53)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended December 21, 1929

(*Continued from Page 52*)

Stephens County

Company	Well No. & Farm	Location
Ven-Mex et al.	3-Medley	NWc NE NW NE 2-2-8 W
Magnolia	9-Peck	SWc SE SE NE 13-2-8 W
Franklin	1	NW NE NW 8-2-6 W
Magnolia	10-Peck	SEc NE SW NE 13-2-8 W

Tulsa County

Dunnigan et al.	1-Brown	CNL NE NW 28-17-14 E

Wagoner County

Bryan	1-Rothammer	SEc SW SW 1-16-15 E

KANSAS

Coffey County

Selby	2-Scott	SE NE SW 13-23-14 E

Cowley County

Lewis-Prod.-Gypsy	1-Pierce	NW NE SE 30-31-6 E

Greenwood County

Young et al.	1-Bowman	CEL SE NW 7-24-13 E
McGinnis et al.	1-Henley	SWc NE 23-25-9 E

Lyon County

Ritchey-Moore	6-Pixlee	CSL SW 34-21-10 E

McPherson County

Galf-Brown	1-Ziethlow	NE SE SE 7-17-1 W
McBride et al.	3-Voshell	NW NE NE 9-21-3 W
Shell	1-Stuckey	NE SE SE 9-21-3 W

Sedgwick County

Barnsdall-Graham Bros.	2-Rapp	NWc 22-26-2 E

Woodson County

Hinsley et al.	2-Barngrover	SE SW NW 7-23-15 E

TEXAS

NORTH CENTRAL & EAST CENTRAL

Company	Well No. & Farm	Location	Survey
Brown County			
Combs-Rodgers et al.	1-Banner	Blk-105	Hawkenburg
Hamon	1-Fitzgerald	Blk-4	Robinett
Humble	2-Carter state land	.....	Carter state land
Cranfill-Reynolds	3-Bull	Blk-623	Honeycutt
Sharp Bros.	10-Byler	Blk-43	T&NO
Callahan County			
Jordan et al.	1-Seale	Sec-12 Blk-3	T&P
McCleary	1-Hickman	Sec-1	I&GN
Hudson-Steward-Robinson	1-Swafford	Blk-769	McKinney
Stegall	1-Cottle	Sec-2048	TE&L
Coleman County			
Texon-American Synd.	3-Newton	Sec-1 Blk-519	San Augustine Univ.
Taylor-Link	1-Stewardson	Sec-96	ET
Lloyd et al.	3-Bartholemow	Blk-279	Farris
Lloyd et al.	4-Bartholemow	Blk-279	Farris
Lloyd et al.	5-Bartholemow	Blk-279	Farris
Tidal	1-Stewardson	Sec-91	ET
Hudmall-Pyrtle et al.	1-Sealy	Blk-43	Ragnet
Tower-McKenna	1-Crowder	Blk-483	Woods
Reeves-Riley	1-Reeves	Blk-245	Goodrich
Eastland County			
Anna Belle	1-Paschall	Sec-80 Blk-4	H&TC
Texas Pacific	29-Butler	.....	York
Texas Pacific	1-Parrock	Sec-63 Blk-4	H&TC
Lone Star	1-Lewis et al.	Lot-2	Howell
Lone Star	5-Storm	Sec-470	SP
Hill County			
Batts et al.	2-Holderman	.....	Sullivan
Harper-Laston	4-Jones	.....	Graves
Hood County			
Sampson	1-Ables	.....	Cattonett
Standard Oil Co. Tex.-& McLarren	1-Cogdell	.....	Robinson
Jack County			
Hopkins et al.	1-Riggs	.....	Matthews
Panhandle	3-Box	.....	Hughson
Panhandle	2-Leffell	.....	Hughson
Shaw	4-Box	.....	Hughson
Bryson	2-Loving	.....	Ragsdale
Harper et al.	6-Ezell	.....	Hughson
Republic Prod.	2-Ezell	.....	Hughson
Limestone County			
Maley-Heeman	1-Wilkes	.....	Breeding
Shackleford County			
Morton	1-Green	Sec-811	TE&L
Holden et al.	1-Compton	Sec-49	BAL
McClintock-Griffith	1-Davis	Sec-1542	TE&L
Vacuum	6-Mathews	Sec-29	ET
Texas	1-Cutbisth	Sec-82 Blk-12	T&P
Tannehill	28-Newell	Sec-11 Blk-11	T&P
Tannehill et al.	7-Mathews	Sec-34	ET
Owens et al.	1-Morris-Bowie	Sec-190	ET
Perrine-Tidal et al.	1-Davis	Sec-15 Blk-12	T&P
Merrick-Lamb	5-Mathews	Sec-32	ET
Holden et al.	2-Jackson	Sec-68 Blk-11	T&P
Hart-Wright	3-Clark	Sec-2	BAL
Hart-Wright	1-Deats	Sec-20 Blk-11	T&P
Cranfill-Reynolds-Skelly	2-Mathews	Sec-31	ET
Coleman-Styles et al.	1-Clark	Sec-2	BAL
Callahan-Carter	1-Clark Est.	Sec-2	BAL

NORTH TEXAS

Archer County			
Stumpf et al.	2-Ward	.....	Tomlinson
Golding-Cochran et al.	2-Kiche	Blk-25	Meade
Nicholson	1-Taylor	Blk-20	Herring
Humble	1-McCory	.....	DL&C
Magnolia	6-Kunkel	Sec-4	BBB&C
Carter	1-Young	Sec-2426	TE&L
Clark-Douglas	1-McClure	Blk-13	Crawford
Duke et al.	1-Harmel	Sec-2491	TE&L
Golding-Cochran et al.	1-Kiche	Blk-25	Meade
Baylor County			
Hart et al.	1-Stephens	Blk-12	Tryndale
Consolidated	5-Portwood	Sec-3138	TE&L
Childress County			
Continental-Sun	1-Johnson	Sec-580 Blk-H	W&NW
Clay County			
Sacet	1-Stine Bros.	Sec 1	PCSL
Cooke County			
Lloyd	9-Wheelock	.....	Underwood
Lloyd	10-Wheelock	.....	Underwood
Green et al.	1-Gatewood	Sec-2	Slingland
Denton County			
Tabeaume	1-Marion	.....	Bebee
Montague County			
Tubbs et al.	1-Reed	Blk-36	Garrett
Wichita County			
Stumpf	1-Barton	.....	Spillers
Wilbarger County			
Texas	E23-Waggoner	Sec-25 Blk-4	H&TC
Texas	E24-Waggoner	Sec-25 Blk-4	H&TC
Texas	E25-Waggoner	Sec-25 Blk-4	H&TC
Texas	F3-Waggoner	Sec-9 Blk-5	H&TC
Empire	A20-Waggoner	Sec-32 Blk-4	H&TC
Empire	A21-Waggoner	Sec-32 Blk-4	H&TC
Empire	B29-Waggoner	Sec-32 Blk-4	H&TC
Golding-Cochran	H7-Waggoner	Sec-33 Blk-4	H&TC
Easter	F1-Waggoner	Sec-48 Blk-2	H&TC
Davis	6-Waggoner	Sec-35 Blk-2	H&TC
Lido	C3-Waggoner	Sec-35 Blk-2	H&TC
Staley-Wynne	G18-Waggoner	Sec-32 Blk-4	H&TC
Staley-Wynne	S5-Waggoner	Sec-25 Blk-4	H&TC
Hiland	3-George	Blk-29	Poitevent
Zenith	2-George	Blk-29	Poitevent
Davis	7-Waggoner	Sec-35 Blk-2	H&TC
Davis	8-Waggoner	Sec-35 Blk-2	H&TC
Waggoner	P8-Waggoner	Sec-35 Blk-2	H&TC
Waggoner	P9-Waggoner	Sec-35 Blk-2	H&TC
Waggoner	P10-Waggoner	Sec-35 Blk-2	H&TC
Atlantic-Seigler	7-Waggoner	Sec-35 Blk-2	H&TC
Staley-Wynne	B8-Waggoner	Sec-25 Blk-4	H&TC
Wise County			
Rosenfield et al.	1-Texas Land & Mortgage Co.	Sec-15	Smith Co. Sch. Ld.
Young County			
Alexander	1-Drum	.....	Tynes
Wise-Jackson-Devonian	1-Miller	Blk-5	Rohus
Wise-Jackson	6-Cullers	.....	Hatt
Bridwell	6-Cullers	.....	Hyatt
Gorsuch	B3-Matthews	.....	Rohus
Wooten-Reed	3-Casey	Sec-1486	TE&L
Allday	1-Petty et al.	Sec-3404	TE&L
Continental-Underwood	4-Campbell	Sec-1376	TE&L
Bolin-Lindsey	1-Wolf	Sec-165	TE&L
Archer Drlg.	1-Hill Est.	Sec-195	TE&L
Scarbrough	1-Sewell	Sec-1589	TE&L
Sun	18-Kunkel	Sec-4	BBB&C
Jones-Sharp	1-Smith	Sec-71	TE&L
Beavers-Moran	1-Mullinax	Sec-183	TE&L
Goldsmith	1-Rogers	Sec-166	TE&L
Madden et al.	1-Winkler	.....	Haleman

PANHANDLE

Carson County			
Danciger	4-Moore	Sec-125 Blk-4	I&GN
Ryand Consolidated	8-Black	Sec-111 Blk-4	I&GN
Gray County			
Texas	20-Saunders	Sec-3	B&B
Camell	2-Harrah	Sec-150 Blk-3	I&GN
Texas	1-Bell	Sec-183 Blk-B-2	H&GN
Wheeler County			
Upham	8-Gootch	Sec-81 Blk-23	H&GN
Wishkamper et al.	2-Curry	Sec-53 Blk-23	H&GN
Prince-Adams	1-Burcham	Sec-89 Blk-17	H&GN
Burnett-Hosher	1-Hosher	Sec-63 Blk-17	H&GN

WEST TEXAS

Crane County			
Church-Weekly	5-Univ.	Sec-39 Blk-30	Univ.
Church-Weekly	1-Univ.	Sec-34 Blk-30	Univ.
Humble	E1-Univ.	Sec-40 Blk-30	Univ.
Glassock County			
Amerada	1-Coffee	Sec-22 Blk-33	T&P
Simms	2-Coffee	Sec-22	T&P
Kirby et al.	3-Baker	Sec-23 Blk-33	T&P
Howard County			
Magnolia	19-Roberts	Sec-157 Blk-29	W&NW
Moody	21E-Roberts	Sec-136 Blk-29	W&NW
Owen-Sloan	16-Roberts	Sec-136 Blk-29	W&NW
World	22-Roberts	Sec-137 Blk-29	W&NW
Continental	13-Clay	Sec-139 Blk-29	W&NW
Pecos County			
Anna Belle	1-Hollingsworth	Sec-24 Blk-11	H&GN
Henshaw	1-McDonald	Sec-2	HE&WT
World	C1-Univ.	Sec-7 Blk-20	Univ.
Amerada	1-Univ.	Sec-13 Blk-18	Univ.
Landreth Prod.	8-Univ.	Sec-13 Blk-18	Univ.
Arkansas	A1-Univ.	Sec-32 Blk-16	Univ.
Stine-Griffith	1-Ferranback	Sec-9 Blk-603	GC&SF
California	2-Tippett	Sec-2	Robertson
Transcontinental & Arkansas Natural	1-Mathews	Sec-10 Blk-194	TC
California	6-Smith Lse. No. 1	Sec-21 Blk-194	TC
Terrell County			
Milham	1-Bassette	Sec-76 Blk-Y	Robertson
Ward County			
Alpine	1-Dakan	Sec-11 Blk-5	H&TC
Anderson et al.	1-Johnson	Sec-7 Blk-32	H&TC
Winkler County			
Skelly	9-Hendricks	Sec-40 Blk-26	PSL
Skelly	12-Hendricks	Sec-40 Blk-26	PSL

(*Tables Continued on Page 56*)

Wells at Van Stir Wildcatters Production 6400 Bbls.

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Dec. 19

RESULTS obtained in the new Van field of eastern Van Zandt county, northeastern Texas. have stimulated wildcatting in areas away from the Pure Oil Co.'s discovery block. The new field is 55 miles northeast of the Powell field and 45 miles northwest of Boggy Creek field.

A half dozen tests are already being put down, or are contemplated, by as many wildcatting interests. Additional acreage is being assembled in adjacent wildcat areas and more tests are certain to be made.

Four offset producing wells in the Van field, where the Pure Oil Co.'s discovery was drilled about two months ago, are now making approximately 6400 barrels daily from pav identified as the Woodbine sand. All are being exploited at less than their possible open flow production.

No. 1 Tunnell, on Shell Petroleum Co. acreage, offsetting the Pure Oil Co.'s Jarman discovery to the east, gauged 1810 barrels initial production through nine-sixteenths inch choker the first 24 hours at total depth of 2680 feet. No. 2 Tunnell, south of No. 1, tested 1765 barrels in 24 hours from 2666 feet.

Increased to 1100 Barrels

The earlier No. 1 Thompson completion of the Pure was making 1775 barrels daily, early in the week, through nine-sixteenths inch choker. The Jarman discovery was off production while six and five-eighths inch casing was being run, but had increased its flow from 260 barrels to more than 1100 barrels daily when equipped with a larger choker.

Drilling will proceed under a unified development plan, which calls for the fulfilling of leasehold requirements but insures the pinching of resulting production so as to conserve gas pressures and avoid competitive line drilling.

As previously set forth in this periodical,[1] unified operations will not prevent the drilling of perhaps 100 Van field wells in the next 15 months, but the handling made possible under the system followed will avoid economic wastage or market menace.

Students of the Van field situation remain confident that production there will not be allowed to exceed 25,000 barrels daily in the next few months; and they hope that the drilling of subsequent wells required by lease contracts will not carry daily averages too high above that level next year.

Wildcat Tests Going Ahead

Meantime, work is going ahead on wildcat tests away from the Van field block of acreage pooled by the Pure, Texas, Shell, Humble and Sun companies for cooperative development.

Results obtained outside the Van block, if any, will represent fresh field discoveries. That they may be found is problematical, as testing in the general area has not been sufficient as yet to show whether the Van discovery is on a deep-seated salt dome, as inferred by some authorities, or whether the structure is of broader uplift character.

McElmurry and others are moving material to location 160 feet from the east line and 460 feet from the north line of the W. J. Reel 134-acre tract out of the S. T. Meeks survey.

Southwest of the Van field, the T. G. Shaw interests are getting ready to start up on a test in the northeast corner of the S. C. Huddle 100-acre tract in the L. Richardson survey.

Timbers are being moved to location of the No. 1 Everett test of Thornton & Lauber, 150 feet each way out of the southeast corner of the Everett 26-acre tract in the A. Carlisle survey, where a 2500-acre block has been assembled.

Tentative Locations Made

Tentative location has been made by Harper & Kinnon of Shreveport in the center of the C. W. Morris 160-acres, in the C. L. Morrison survey. Harper & Kinnon acquired 1500 acres from Dallas interests who recently assembled a 4000-acre block in the C. L. Morrison and J. Adams surveys.

A 90-day drilling contract applies on a 4000-acre block taken by the Petroleum Holding Corp., centering around the Raymon Sunigas survey, for which $5 an acre bonus was paid.

North of the Van field, on a block assembled several years ago by Humble Oil & Refining Co., two more locations for core drill tests are being made. A present core test in the C. E. Rivers survey is down more than 1425 feet.

In Smith county, east of Van Zandt, the J. K. Hughes interests of Mexia are reported to have taken over a block of 6000 acres around the town of Swan. A 4000-foot test is understood to be called for, work to begin in 60 days.

Davis and others of Cameron are moving in materials for a test in the center of the J. N. Starnes 100-acre tract in the W. J. Allen survey. The test is to be inside a larger block recently assembled.

Geologist Reports on Field

A contribution to the recorded history of the new Van field is given in the December 1929 Bulletin of the

[1] NATIONAL PETROLEUM NEWS, page 58, Dec. 11, 1929 issue.

Woodbine Formation in Van Field

Record of Woodbine formation thus far penetrated in discovery well in the new Van field, eastern Van Zandt county, Texas, as reported by R. A. Liddle, Texas division chief geologist of the Pure Oil Co.

Feet

2560-2610—Red and gray mottled shale. Green and black shale.
2610-2636—Sand with thin beds of sandy shale, all of which is saturated with oil. (Gas sand, hard, 2610-2613)
2638-2655—Red and gray mottled shale.
2655-2662—Oil sand, highly saturated.
2662-2678—Red and gray mottled shale.
2678-2710—Oil sand, alternating hard and soft beds. (Gas sand, hard, 2678-2680.) At 2710 the well is still in highly saturated oil sand.

American Association of Petroleum Geologists by R. A. Liddle, Texas division chief geologists of the Pure Oil Co., who writes as follows:

"In the early part of 1927, the geological department of the Pure Oil Co. was making a careful investigation of East Texas for surface indications of deeply buried salt domes. In the course of this work, the topography, drainage, erratic dips and surface faulting in the southeastern part of Van Zandt county suggested an uplift with its highest point in the vicinity of the town of Van.

"In May, 1927, a seismograph party of the Geophysical Research Corp., in the employ of the Pure Oil Co., was assigned to detail this area. Their work indicated a large anticline, the apex of which seemed to be just north of Van. . . .

Detailed Survey of Region

"Subsequent to this seismograph work, a detailed survey of the areal and structural geology of this region was made and it indicated that the Wilcox-Claiborne (Eocene Tertiary) contact had an abnormal trend east and south of Van. From the vicinity of Jamestown a greensand near the base of the Mt. Selman formation occurs intermittently southward along the Smith-Van Zandt county line to the locality of Galena.

"Turning southwest at this place, it strikes due west approximately three miles, forming a rim around the east and south flanks of the structure. Structural contours on this greensand show a fairly steep dip toward the east, southeast and south; on the west and north flanks of the Van structure the greensand has not been preserved.

"In January, 1929, core drilling was begun on the Van structure, the locations for the tests being governed by the control established from the geological and geophysical work. Core drilling was completed in July, 1929.

"In some of the core holes on top of the dome, oil and gas at shallow depths were found, the best showings being in the Nacatoch sand (Upper Cretaceous) which lies between depths of 1100 and 1300 feet. The coring confirmed earlier geological and geophysical work in indicating a domed anticline of great magnitude.

Performance of Discovery Well

"Jarman No. 1 (the discovery test) found many showings of oil and was completed as a commercial well in the Woodbine formation (Upper Cretaceous) at depth of 2710 feet on Oct. 13, 1929. At 2587 feet, nine and five-eighths inch casing was set.

"To date (note—this statement no longer applies) no flow string has been run and the well has not been swabbed or bailed, as is customary in other fields where production is from the Woodbine.

"After being washed the well had an initial production of 147 barrels an hour. For the first 24 hours it flowed 1790 barrels through a one and a half-inch choke. Then it was gradually pinched and on Oct. 20 was placed on one-half inch choke. Since that time it has flowed at an average rate of 260 barrels a day on one-half inch choke. (Note—increased to more than 1100 barrels daily resulted from opening the choke, Dec. 8.)

"The gravity of the oil is 35.4 degrees A.P.I., and in content is similar to the oil of the Powell field.

"Top of the Woodbine formation in Jarman No. 1 is placed at approximately 2560 feet, where the first red shales occur below fossiliferous beds of the Eagle Ford formation. A record of the Woodbine thus far penetrated is shown in an accompanying table."

Many Untested Structures Exist in Venezuela

Staff Special

TULSA, Dec. 2?

THERE are still many untested areas in Venezuela though the country as a present day threat to the oil industry is somewhat overrated. This was the principal point made by R. A. Liddle, geologist in charge of Texas operations for the Pure Oil Co., in his paper before the Tulsa Geological Society, Dec. 16.

Mr. Liddle outlines the geologic divisions of Venezuela early in his discussion and followed this comprehensive survey with a detailed description of the geologic section. Much of the early information obtained by geologists in the South American country, was attained by the digging of pits. According to the speaker, the method was not satisfactory, but outcrops are few in the plains regions away from the mountain ranges and it was about the only means of finding structure indications.

Much work has been done with geophysical instruments with the result that many worthwhile structures have been located. There still remains considerable territory yet to be covered however.

The general idea of Venezuela is that it covers a much larger portion of the South American continent than it actually does. In reality the country is but a little larger than the state of Texas. The area from which the major portion of the production now is coming compares in size to the Panhandle, though its output is about three times as great.

The future will probably tell a different story for there are enormous areas that are as yet untested. Large oil seeps are common and all of the eight producing pools are connected directly to such seeps. These tangible evidences of the presence of oil however, are not found in the plains territory that makes up the greater part of southern and central Venezuela, and this region offers the greatest possibilities for future development.

Mr. Liddle also gave an informal talk on the Van pool in Van Zandt county, Texas, outlining the method of the discovery and the early development under the unit plan.

The structure was originally discovered with the seismograph and was later checked by a detailed survey of the areal geology. Core drilling, at three mile intervals, resulted in proof of the above findings, and a location was made for the first well. Many of the core drill holes found oil and gas in the upper formations as did also the first well, but the latter was carried to the Woodbine of upper Cretaceous. At a total depth of 271 feet the well had an initial production of 1700 barrels.

The outstanding features of the Van pool, according to Mr. Liddle, are its high porosity, which averages about 30 per cent and the thickness of the pay sand, which is in excess of 80 feet. Numerous faults are known to be present and may make the drilling of any well in the area a rather speculative proposition.

Drilling practice is simple as only two strings of pipe, surface, and 6-inch on top of the pay, are set. With rotary tools it would be entirely possible to drill 2600 feet of hole in four days though this speed is frowned upon by everyone except the drillers.

Development of the Van pool is now in the hands of petroleum engineers of the companies in the unit plan. These companies, the Pure Oil Co., the Shell Petroleum Corp., Sun Oil Co., and The Texas Co., are bearing proportionate shares of the expense, and pooling their acreage.

Tagliabue Opens Shreveport Branch

BROOKLYN, N. Y.—A branch factory is being opened by the C. J. Tagliabue Mfg. Co. at Shreveport, La. as of Jan. 1, to provide quicker service for users of this company's instruments in Texas, Oklahoma, Kansas, Missouri, Arkansas, Mississippi, Tennessee, Louisiana and Alabama.

The prime function of the new factory will be repair work. There will also be stocks of all standard instruments on hand.

Completions in Texas, Week Ended December 21, 1929

NORTH CENTRAL & EAST CENTRAL

Brown County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Smith	15-George	Chaddick		1222-1245	150
Texas	5-Johnson	Nix		1321-1325	115
Tex-Cal	4-Martin Heirs	HT&B	Sec-11	983- 986	30
Brown et al	1-McIntosh	HT&B	Sec-28	T.D. 180	Dry
Windsor et al	1-Pierce	T&NO	Blk-44	T.D. 1405	Dry

Callahan County

Richards	1-Gorsuch	BB&C	Sec-57	T.D. 1330	Dry
Mundy	1-Green	D&DA	Sec-27	T.D. 663	Dry
Hudson-Steward-Robinson	1-Webster	Hickman No. 5		T.D. 590	Dry
Texas	3-Finley	BOA	Sec-75	1011-1015	¼M
Westheimer-Daube	1-Hart	D&DA	Sec-7	510- 518	4

Coleman County

McCamey et al	2-Smith	GH&H	Sec-35	2135-2148	8
Eastland	1-Griffin	Woods	Blk-483	T.D. 2235	Dry
White Eagle et al	1-Jamison	Woods	Blk-483	T.D. 2028	Dry

Eastland County

Hickock Drlg. & Prod.	1-Johnson	H&TC	Sec-25 Blk-3	T.D. 3962	Dry
Southern	1-Owens	H&TC	Sec-48 Blk-4	T.D. 4025	Dry
Texas-Warren-Quinlan	1-Hitson	SP	Blk-2	T.D. 3860	Dry
Cranfill-Reynolds	1-Turner	H&TC	Sec-30 Blk-2	T.D. 1327	Dry
Root et al	1-Hazel	H&TC	Sec-63 Blk-4	3625-3740	40

Erath County

Mingus	1-Alexander	Espinosa	Lot-19	3450-3454	1.902M
Frazier-Watson	1-Blanton	No. 14		T.D. 3815	.368M

Jack County

Harper et al	9-Box	Hughson		3126-3132	145
Harper et al	8-Box	Hughson		3128-3149	100
Panhandle	12-Daniels et al	Hughson		3095-3115	260
Panhandle	1-McKelvey	Hughson		3099-3101	550
Shaw	2-Box	Hughson		T.D. 2617	Dry
Buttram	1-Lindsey	Wright		T.D. 3515	Dry
Gilmore et al	1-Price	SP	Sec-1	T.D. 550	Dry

Runnels County

McLean et al	1-Clayton	ET	Sec-135	T.D. 1185	Dry
Summers et al	1-Reese	Day Land & Cattle Co		T.D. 1655	Dry

Shackleford County

Carter	1-Neil	ET	Sec-66	T.D. 1315	Dry
Cranfill-Reynolds-Skelly	1-Mathews	ET	Sec-31	T.D. 1196	Dry
Hart-Wright	2-Clark	BAL	Sec-2	T.D. 890	Dry
Manning et al	1-Newell	T&P	Sec-12 Blk-12	T.D. 1290	Dry
Owens et al	2-Davis	T&P	Sec-15 Blk-14	T.D. 1701	Dry
Union Oil Co. of Nevada	1-Davis	T&P	Sec-24 Blk-12	T.D. 1507	Dry
Hamon Jr.	1-Morris-Davis	ET	Sec-167	T.D. 1652	Dry
Moutray	3-Nail	ET	Sec-40	T.D. 841	Dry
Hart-Wright	1-Clark	BAL	Sec-2	680- 683	55

Stephens County

Conway Bros	13-Harmon	T&P	Sec-51 Blk-6	2040-2050	1
Byers	1-Hatton	Nolan		T.D. 2111	Dry

Throckmorton County

Johnson	1-Cox	TE&L	Sec-2228	T.D. 450	Dry

NORTH TEXAS

Archer County

Barnsdall	18-Wilson	Howard		1711-1712	80
Burns	6-Tidal et al	Carson	Blk-152	1480-1484	16
Continental-Cullum	3-Falls Co. Sch. Ld.	FCSL	Blk-9	1131-1132	51
Seaberry et al	1-Brown	ATNCL	Sec-98 Blk-13	1290-1295	8
Burns	1-Turbeville	Carson	Blk-153	T.D. 1483	Dry
Cline	1-Harcky	Meade	Blk-37	T.D. 1549	Dry
Consolidated	1-Wright	TE&L	Sec-2435	T.D. 1475	Dry
Perkins-Cullum et al	1-Hamilton	BBB&C		T.D. 1201	Dry
Riner-Bailey	2-Wilson	Harritz		T.D. 1783	Dry
Stumpf	2-Ford	Myer		T.D. 1800	Dry
United Prod.	1-Parkey	ATNCL	Sec-2	T.D. 1756	Dry

Baylor County

Consolidated	4-Portwood	TE&L	Sec-1281	T.D. 1426	Dry
Consolidated	2-Portwood	TE&L	Sec-3138	1424-1429	20
Brisham-Barnsdall	1-Portwood	TE&L	Sec-1281	1388-1402	95

Clay County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Merrick-Goldsmith	2-Byers Bros	Byers Bros.	Sec-15	1013-1014	70
Saxet	1-American	Parker Co. Sch. Ld.	Blk-3	T.D. 1065	Dry

Cooke County

Coline	6-Huggins	SP		T.D. 1146	Dry
Kewanee	1-Pickett	Sadler		T.D. 1600	Dry

Montague County

Continental-Bridwell	C1-Cunningham	Edmonson		1113-1116	54

Wichita County

Everts-Jamison	3-Gibson	Waggoner	Blk-302	1910-1934	27
Sheldon et al	1-Gibson	Waggoner	Blk-310	1904-1931	96
Texas	370-Waggoner	GC&SF		1958-1967	23
Sheldon-& Ven-Mex	3-Whittenbach	Waggoner	Blk-303	T.D. 1952	Dry
Stumpf	1-Chilson	Ramsey	Blk-3	T.D. 1923	Dry

Wilbarger County

Dixie	G1-Waggoner	H&TC	Sec-7 Blk-17	T.D. 2545	Dry
Empire	A18-Waggoner	H&TC	Sec-32 Blk-4	T.D. 2145	Dry
Empire	B9-Waggoner	H&TC	Sec-32 Blk-4	T.D. 2285	Dry
Empire	C17-Waggoner	H&TC	Sec-25 Blk-4	T.D. 2458	Dry
Lyon	A1-Waggoner	H&TC	Sec-28 Blk-4	T.D. 2585	Dry
Norwood et al	1-Wells	H&TC	Sec-47 Blk-16	T.D. 3030	Dry
Texas	365-Waggoner	H&TC	Sec-39 Blk-4	T.D. 2503	Dry
Waggoner	P2-Waggoner	H&TC	Sec-35 Blk-2	2655-2673	400
Zenith	1-Dill	H&TC	Sec-82 Blk-14	2205-2214	107
Empire	B25-Waggoner	H&TC	Sec-32 Blk-4	2293-2292	84
Empire	C18-Waggoner	H&TC	Sec-25 Blk-4	1910-1917	105
Hiland	2-George	Poitevent	Sec-29	2208-2211	135
Staley-Wynne	E6-Waggoner	H&TC	Sec-25 Blk-4	2385-2397	80
Staley-Wynne	AA1-Waggoner	H&TC	Sec-33 Blk-4	2324-2335	57
Ven-Mex	F4-Waggoner	H&TC	Sec-8 Blk-4	1946-1954	
Waggoner	J14-Waggoner	H&TC	Sec-25 Blk-4	2415-2418	160

Young County

Hinson-Tidwell	1-Perkins	Mitchell	Sec-20	2652-2655	53
Gorsuch	2-Matthews	Rohus		718- 730	40
Perkins-Collum	1-Deitrich	Stell		1136-1154	175
Sun	15-Kunkel	BBB&C	Sec-4	1138-1159	150
Texas	1-Hoffman	Averett		T.D. 800	Dry

PANHANDLE

Note—Not reporting

WEST TEXAS

Cochran County

Marshall	1-Slaughter	Carson Co. Sch. Ld. League-130		4895-5000	7

Crane County

Texas	2-Beasley	Univ.	Sec-46 Blk-30	2850-3000	227

Glasscock County

Lion	2-Coffee	T&P	Sec-22 Blk-33	3185-2235	500
Sun	4-Phillips	T&P	Sec-14 Blk-33	2310-2320	70 (1 Hr.)

Howard County

Ward	17-Roberts	W&NW	Sec-137 Blk-29	1303-1390	50 (14 Hrs.)
Moody	29-Roberts	W&NW	Sec-137 Blk-29	1906-1911	25
Continental	3-Clay	W&NW	Sec-138 Blk-29	2989-2999	99

Loving County

Lockhart	4-Hubbard	H&TC	Sec-83 Blk-33	4229-4236	72

Pecos County

Taylor-Link	8-Univ.	Univ.	Sec-31 Blk-16	1649-1675	120
Landreth Prod.	D1-Univ	Univ.	Sec-31 Blk-16	962- 968	42
Landreth Prod.	F1-Univ.	Univ.	Sec-31 Blk-16	964- 988	257
Landreth Prod.	G1-Univ.	Univ.	Sec-31 Blk-16	968- 997	48
Landreth Prod.	1-Univ.	Univ.	Sec-13 Blk-18	T.D. 950	66⅔M
Sun	1-Univ.	Univ.	Sec-25 Blk-18	T.D. 1813	Dry
Moncrief et al	1-Clarkson	H&GN	Sec-84 Blk-11	T.D. 1832	Dry
Trees	1-Trees	H&GN	Sec-43 Blk-8	T.D. 2982	Dry

Reeves County

McBest	1-Kinney et al	PSL	Sec-26 Blk C-18	T.D. 1160	Dry

Uptown County

Pure	2-Hughes	Tees	Sec-4	2265-2310	63

Ward County

Continental	2-Sealy	G&M MB&A Blk-A	Sec-81	T.D. 3358	Dry

Completions in California, Week Ended December 14, 1929

Long Beach

Company	Well No.	Location	Depth	Init. Prod.
Petroleum Securities	Davis 1	....	6817	1150

Maricopa Flats

Doyle Petroleum Corp.	Son-Crail 1	....	3450	2500

Santa Fe Springs

Bardeen, H. A	Wardman 3	....	8064	8600
Commodore Pet. Corp.	Babonet 3	....	7975	1900
General Pet. Corp	Santa Fe 136	....	6896	1060
General Pet. Corp	Santa Fe 145 F	....	6229	1620
General Pet. Corp	Hill 187 C.	....	8025	3200
Santa Fe Springs Oil Co.	Bruson 1	....	7997	850
Shell Oil Co	Slusher 14	....	7900	1150
Superior Oil Co	Wardman 5	....	7933	11220
The Texas Co	Matern 3-15	....	7975	2200
Twin-Bell Synd	No. 3-1	....	8072	2000
Union Oil Co	Bell 44	....	7928	1600

Ventura Avenue

Shell Oil Co	Taylor 42	....	6969	1225

Completions in North Louisiana and Arkansas, Week Ended December 19, 1929

Louisiana—De Soto Parish

Company	Well	Location	Depth	Yield
P. J. Becker	Tull No. 1	23-12-15	2475	jnckd abnd.
Longstreet Syndicate	Ramsey No. 1	33-13-16	2802	jnckd abnd.

LaSalle Parish

Gardner, Brown and Horter	Windberry No. 1	18-10-2E	1534	salt water abnd.

Morehouse Parish

Bahan and Bahan	Feazel No. 2	3-26-4E	2185	5½M ft. gas
Southern Carbon Co.	U. S. A. No. 1	13-20-4E	2195	3¼M ft. gas

Union Parish

Interstate Nat Gas Co.	Fee 24	23-20-3E	2170	4,569,000 ft. gas
Interstate Nat Gas Co.	Fee 25	23-20-3E	2164	4,060,000 gas

Ouachita Parish

Chauvis Gas Co.	Slagle-Johnson No. 3	49-18-4E	2256	2M cu. ft. gas
Southern Carbon Co.	Fee 54	13-19-4E	2020	jnckd abnd.
West Va., O. and G., Co.	West Va., No. 9	5-18-4E	2205	2,257,000 gas

Richland Parish

Northern La. Nat. Gas Co.	C. M. Purvis No. 1	3-16-6E	2450	46,420,000 gas
Richland Prod. Co.	Brown, No. 1	1-16-6E	2452	47,556,000 gas

Sabine Parish

Bridges-Clark Oil Co.	Williams No. 3	33-10-12	3219	90 bbls. oil

Webster Parish

Pat Hudson	Gardner No. 1	1-22-11	2743	40 bbls. oil

Texas—Panola County

Ark-La., Pipe Line Co.	Crenshaw No. 3, B. F. Mitcheson	HRS	2507	1,100,000 gas
The Texas Company.	Brumble No. 6, John Womack	HRS	2350	½M gas

When Old Man Trouble Visits Well
Mr. Hughes Goes Fishing

By John Power
N. P. N. STAFF WRITER

TULSA

BACK in the days when the oil world centered around the Pennsylvania fields C. D. Hughes was learning the business. His first job was pumping a well for his father on a farm near Oil City. Considered too young to start dressing tools, he handled the well, which was pumped with a steam driven engine and a rope reverse.

He was even too young to know a raccoon when he saw one. The story goes that one night when he was walking out to the well to fire up, his dog tangled with a young 'coon. Whether or not the dog knew what he was up against young Hughes didn't know, but his presence seemed to inspire the dog to deeds of bravery which he hadn't shown while on his own. Up to the time Hughes arrived on the scene the most of the argument between dog and 'coon had been of the "You're another" sort.

With his young master on the job, however, the dog finally treed the 'coon on a low hanging limb. Hughes slipped up behind the 'coon, whose attention was riveted on the barking, excited dog, and grabbed him by the scruff of the neck.

To those who have never seen a raccoon in action that might appear as the normal thing to do. It is not. As a matter of fact close personal contact with an untamed 'coon is very similar to hugging an hysterical wildcat.

The boy managed to hang on to the 'coon until he got him to the well, where he deposited his prize in a box for safe keeping. When he went home the next morning, scratched, bitten, but triumphant, his father's remarks on the brains of a pumper who didn't know a 'coon when he saw one were so disparaging that his son abandoned pumping shortly thereafter, and has stuck to the drilling end of the oil business ever since.

As is not unusual with many men, Mr. Hughes' vocation of cable tool fisherman deluxe came about by accident. Tool dresser, driller, contractor, he had followed the cable tools pretty well all over the country. As a contractor, he became well known for his ability to clean up fishing jobs, and to get the holes down.

Tired of contracting, he had sold his tools back before the war. Standing on a street in Tulsa one day, a friend of his with the Acme Fishing

C. D. Hughes

Tool Co. asked Mr. Hughes to take on a fishing job and clean it up for him.

"Nothing doing," said Mr. Hughes. "I have had enough of fishing things out of my own holes without going around looking for fishing jobs to get out of."

"I know it," said his friend, "that's why I want you to take on this job for me. You have had enough fishing experience to get this job cleaned up, and I'd like you to take it on for me."

After more or less argument, Mr. Hughes consented to take on the fishing job, and from that day on he has devoted his time to fishing exclusively. From job to job, he has travelled all over Oklahoma, Kansas. Texas, and even as far north as Wyoming.

Numbered among the holes which Mr. Hughes has successfully cleaned up are some of the most famous fishing jobs of the past few years of cable tool drilling.

Perhaps the most famous of these is his most recent, when he got a string of tools out of the deepest cable tool fishing job in the world, the No. 2 well in the 8000-foot production at Texon, Texas. Gas had blown the tools up the hole when drilling in had been started, wrapping the line around them and lodging them firmly in the side wall of the hole. The tools were in a 4¼-inch hole, which made fishing for them doubly difficult.

Mr. Hughes first step was to kill the gas which had done the damage. Some 60 million feet of it was blowing up the hole with a rock pressure of 1850 pounds. He got enough water down the hole to kill the gas, and make it possible to get the fishing tools down.

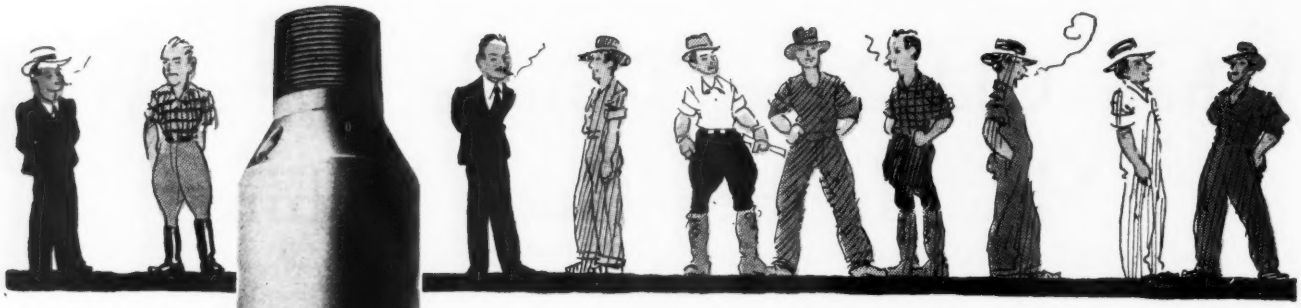
The drilling line, which had spooled around the stem to some extent, was cut as close to the top of the rope socket as possible.

After working on the stuck tools with a drilling mill for a while, a two prong grab was run on top of the tools, and driven down over the top of the milled up rope socket about six inches. The stuck string of tools refused to be jarred down, so Mr. Hughes decided to hitch on again and jar up. No results were obtained at first, but after moving the wrist pin out a hole the tools began to loosen. After being jarred for about 60 feet, they swung free, and came up the hole without any further trouble.

It took Mr. Hughes but 10 days to clear up the job, which, aside from its depth, was not in it compared to some of the complicated fishing jobs which he has faced. It was depth that made the Big Lake job so ticklish, for there is a lot of money tied up in an 8000-foot hole.

Most drillers have pet fishing jobs which they like to talk about. Some time when there was everything in the hole but the tool dressers Aunt Jane, or some time when a job cleaned itself up in some peculiar or spectacular manner.

One such job is a favorite of Mr. Hughes, and it occurred before he had taken up fishing as a continuous proposition. A bailer was lost in the hole. He went in with a latch jack to recover the bailer, but to his surprise the tools sprung clear to the bottom, the flag picking up where



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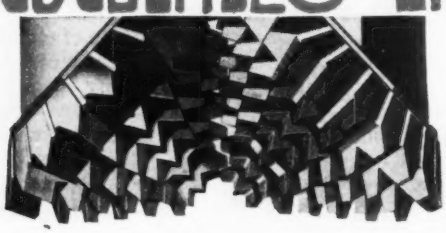

HUGHES TOOL COMPANY

Service Plants:
Los Angeles
Oklahoma City

Main Office and Plant:
HOUSTON
TEXAS

Export Office:
Woolworth Bldg.
New York City

it had picked up when he had pulled the tools out after the last screw had been made.

Deeming it necessary to pull the fishing string and take a look to see if anything peculiar had happened, Mr. Hughes gave his toolie the nod to come on out. Shortly after the tool flag came out of the hole the bailer made its appearance, the bottom of the bailer resting comfortably on the neck of the rope socket. And that was that.

Of course, all his jobs haven't been that easy. One hard job occurred in the Glenn pool. Pipe had been set in the Glenn sand, and pipe that is set in the Glenn is SET. Efforts had been made to pull it, with the result that the pipe had parted, leaving a string of tools with a bull dog spear on the bottom in the last joint. The top of the tools was about five feet below the top of the bottom part of the casing. To complicate matters a little a combination socket bowl was jared in two on top of the tools.

Getting the rest of the casing out of the hole above the fish was fairly easy. But there was too much pipe on top of the tools stuck in the hole to drill up the pipe and get at the rope socket. It was possible, however, to get inside the parted pipe, so the fisherman went in and drilled up the socket bowl.

Drilling on the bowl loosened the pipe in the hole, and when an overshot was run, it took hold and everything, pipe, tools and all, was pulled at once.

Mr. Hughes does not accept fishing jobs on a contract basis, as do many of the professional fishermen. He takes a job at so much per day, and expenses, the rate per day declining as the number of days it takes him to finish the job increases.

Repressuring at Production Peak Doubles Return From Lease

By William F. Lowe
N. P. N. STAFF WRITER

TULSA

THE time to start repressuring on a lease is not when the production curve has reached its lowest point but when it is at its peak. It will then more than pay its way on a small property even when the offset leases are not so operated. These facts have been proven definitely by the Reiter-Foster Oil Corp. in Callahan County, Texas.

Its 60-acre Hatchett lease in section 24, D&D Survey has been producing under a carefully regulated repressuring program since April 1 of this year. Drilling was started on the lease the previous October, and the last of the 25 wells drilled, was completed March 29. Production at that time was at its peak and repressuring was begun two days later, as shown in Figure 2. The result was a doubling of the originally expected recovery.

There is nothing spectacular about the lease except that it exemplifies what can be done with a small property. It is small in every way. The wells had an average initial of but 15 barrels from an average depth of 340 feet, and the peak daily production was only 310 barrels. Yet it paid out well within its first year and now is making the respectable daily average of around 125 barrels.

The producing horizon is a true sand which takes the shape of a horseshoe lease with the Reiter-Foster lease at the closed end. By a careful survey of the well logs it was found that this lease had an upward trending or domed porous streak on the top side. The survey was made by taking an east-west cross section along each line of wells, as shown in Figure No. 1.

From these cross-sections were chosen the two highest wells on the

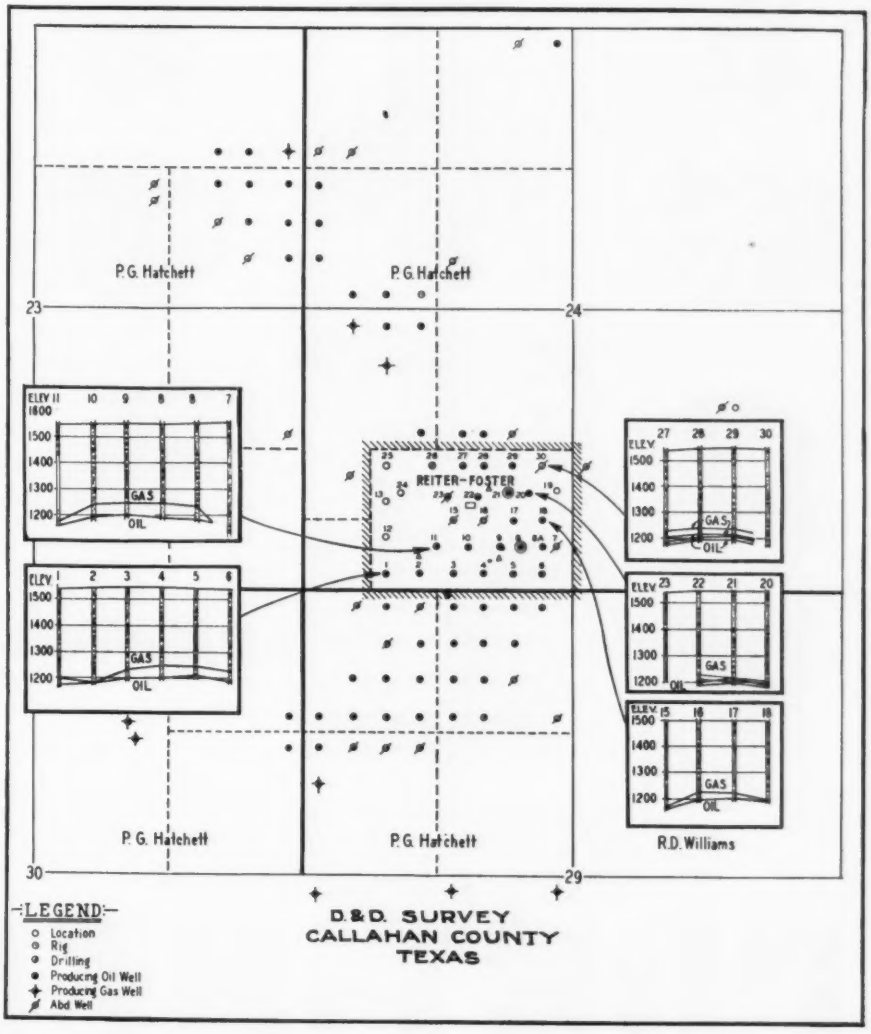

Fig. No. 1—Map showing the Hatchett lease of the Reiter-Foster Oil Corp., in Callahan Co., Texas. The cross-sections illustrate the shape of the producing horizon and the method used in the choice of key wells for repressuring. The latter are shown within circles, the separators as triangles and the compressor station in the center of the lease

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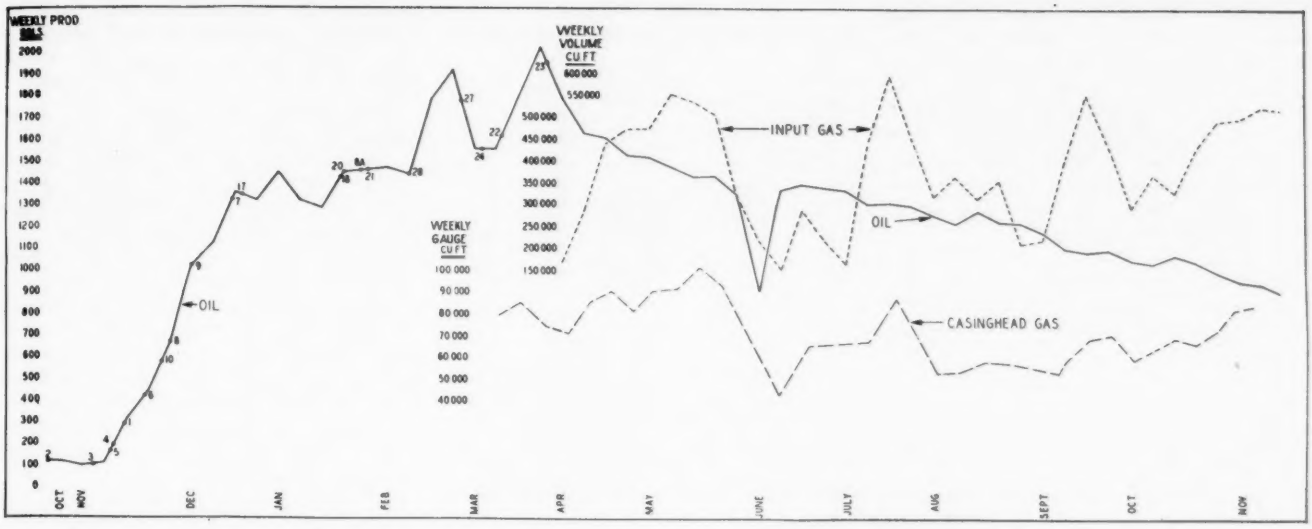


Fig. No. 2—Production curve for the life of the Hatchett lease. The numbers shown on the curve, prior to the starting of repressuring, represent the completion of wells

structure for repressuring key wells. Incidentally, they were also the two best wells, as one of them had an initial of 32 and the other an initial of 34 barrels. It was thought that gas entering the sand through these wells would result in a more even dissemination throughout the lense. The larger porous area in these wells made the control of the input gas easier, and reduced the working pressure of the compressor.

Following the selection of the key wells, gas volume tests were made of all the wells. With a rock pressure of but 35 pounds and the fluid standing 120 feet in the hole, the total volume of the lease was 79,000 cubic feet. This was more than sufficient for lease operation and for repressuring.

The pipe in both key wells was under-reamed to the top of the oil sand and cemented. A portable test compressor was set up to ascertain the working volume and pressure necessary. It was found that a pressure of 110 pounds for three hours would force the 120 feet of fluid standing in the hole back into sand. After that time the pressure was dropped to 85 pounds.

Three day tests were made on each of the key wells with the portable compressor, the result being that 95 pounds was determined as the best working pressure. At that figure the individual key wells would take 55,000 cubic feet of gas per day. For every 5000 cubic above that amount it was necessary to increase the pressure by 10 pounds. With this limit of intake for each well with the temporary equipment, it was decided to split 60,000 cubic feet between them on a double hook-up.

All of the wells on the lease, of which there are now 18 producing, are pumped by a single power. The engine used is a 15 horsepower Tico. Three 4 x 10 foot separators, located as shown in Figure No. 1, take the oil from wells immediately adjacent.

These separators are without valves and a fluid seal is kept on them by the gravity discharge lines to the stock tanks. No fittings are used at the pipe turns where bends can serve the same purpose. The result is that the 2-inch flow lines, swinging up to the top of the separators from some distance away, make them resemble nothing so much as great, spreading spiders.

Beside each separator stands a 20-barrel tank which is used for making weekly tests of each well. These tests have an important value. Yet surprisingly few operators take them, preferring to collect individual well data but once a month. In the case under discussion, the weekly "look-see" not only determines the production of both oil and water but gauges the spread of the input gas.

In this way channeling of gas from the key wells to the producers is guarded against and a more equal distribution is forced.

Through the frequent tests it was found that the gas volume of one well showed an increase of 3000 cubic feet over the previous week's gauge. Had this gauge not been taken, the gas might easily have doubled in volume in another week. The outcome of such a leak, unless checked in its earliest stages, is a complete breakdown of the whole repressuring system.

The remedy is simply a reduction in the length of the pumping stroke so that less oil is taken from the hole. The fluid level then rises to cover the face of the sand and holds the gas back.

Gas is taken from the separators and from all well braden heads through 2-inch lines to a single 1 x 30

REITER-FOSTER OIL CORPORATION

REPRESSURING RECORD

Well No. ..... Lease ..... District ..... Date .....

Total Depth ..... Size and Depth Last String Casing ..... Cemented { Yes / No } I. P. ..... Date .....

DATE	WELL DISCHARGE GAS			INPUT GAS FROM COMPR.			ROCK PRESSURE	FLUID LEVEL	Tubing Depth to Perforation	STROKE		TOP GAS SAND	OIL SAND		PRODUCTION	
	TIME	VOLUME	PRESSURE	TIME	VOLUME	PRESSURE				LENGTH	Frequency		TOP	BOTTOM	OIL	WATER
1																
2																
3																

Form used in Tulsa office for daily reports from the field. Careful use of this record makes distant supervision of lease operations possible

manifold. From the bottom of this header the intake line carries both the drip gasoline and the gas to the compressor for delivery to the key wells. By means of gauges atmospheric pressure is maintained on tanks and flow lines connected to the manifold, and volume is automatically controlled on the intake line to the compressor. The discharge line from the compressor is a split hook-up, so arranged that through the use of orifice flanges the volume of gas can be checked and equally divided between the two key wells.

Experiments with air were conducted from July 6 to Oct. 3, due to a shortage of gas. During part of September air was used exclusively, building the sand volume up from 52,000 to 70,000 cubic feet. Though production stayed fairly level during this period, it is thought that the air was responsible for the larger number of pulling jobs. The cause of this extra labor was caving of the pay sands.

Not being as soluble in oil and having a higher specific gravity than gas, air breaks through the sand without carrying as much oil with it as does gas. It drives rather than joins with the oil to make it a lighter mixture. Air pockets consisting of a group of large bubbles are formed which cause an uneven and jerky flow of the oil through the sand. It is thought that this irregular flow of oil into the hole was responsible for the cavings.

Following the all air experiment a system of alternating air and gas was tried. For two days a week 80,000 cubic feet of air per day was put into the key wells. This was followed by half that amount of gas for six days. From October 3 to 31, while this system was being tried, the production held up well but the pulling jobs were almost as frequent.

A gas well on a neighboring lease with a capacity of 30,000 cubic feet per day, was purchased at the end of this period and the lease is now using only gas for repressuring. The cost of this gas well is being charged off at the rate of 6 cents per thousand cubic feet as the gas is used on the Hatchett property.

It will be noted on the accompanying map of the area that the Reiter-Foster acreage is the only lease with staggered locations. Given ideal sand conditions, this system of spotting wells is also ideal for repressuring. In theory, the gas on entering the sand radiates equally in all directions in more or less concentric rings. Staggered locations make it possible for the gas to reach each well with equal volume.

Ideal subsurface conditions can only be hoped for, but the arrangement of the wells can be made to conform to the theory without any added expense. In the present case regular spacing probably would have served to better advantage as the pay sand is loose in character, permitting a wide distribution of gas from the minimum of key wells. With such a pervious and uniform pay, more wells can be served by one key where the usual spacing of wells is followed.

Where a tight sand is found this staggering of wells is usually advisable for it aids in a more even distribution of the gas. More key wells are required but the results are as a rule better.

Not only has repressuring prolonged the life of this lease but it has raised the gravity of the oil, as shown in Table No. 1. The crude at present ranges from 1 to 2 degrees A.P.I. higher than that of the offsetting properties.

F. W. Shelton, petroleum engineer of the Reiter-Foster, who is directly responsible for the successful operation of the Hatchett property, has spent considerable time in the training of the lease personnel. The result is that a resident engineer is not necessary. By the use of the accompanying form, which is filled in from daily reports, it is possible for Mr. Shelton to superintend all operations from his Tulsa office.

Among the interesting facts brought out by the repressuring experiments on this lease are: (1) Start the system as soon as the property is fully developed without waiting for a production decline; (2) control pressures by 24 hour pumping, using a short enough stroke to assure the highest possible fluid level, or at least one which covers the face of the sand, and (3) make weekly tests. The latter are not the least important in the proper control of the repressuring program.

TABLE NO. 1

Production and Per Barrel Cost on the Hatchett Lease

Month	Barrels	Production Expense	Total Average P.C.P.B.	A.P.I. Average Gravity
1928				
Dec.	4,398.49	$970.63	.2260	37.3
1929				
Jan.	5,747.93	1,392.32	.2422	37.9
Feb.	5,454.93	1,116.61	.2222	38.0
Mar.	6,936.61	1,483.95	.2201	38.0
Apr.	5,778.37	1,940.88	.2481	38.6
May	6,231.94	1,587.39	.2494	38.4
June	4,495.41	1,882.84	.2711	38.5
July	5,190.49	1,368.19	.2704	38.0
Aug.	5,079.60	1,210.23	.2668	37.8
Sept.	4,205.08	1,251.91	.2694	38.0
Oct.	4,056.32	1,085.57	.2676	38.0

Texas & Pacific to Build To Lea County Field

WASHINGTON, Dec. 19.—The Texas & Pacific has defeated the Santa Fe for the privilege of extending their railroads into the Lea county, New Mexico, oil field.

The Santa Fe, however, has been given the privilege of constructing about half way to the field, to Lovington, where its new line would intersect the new line of its successful rival. Doubt is expressed as to whether the Santa Fe will build to Lovington, although it said prospects for agricultural development would warrant a new line to that point.

The Texas & Pacific will build about 70 miles of new track at an estimated cost of $1,825,000. It expects that addition to the line to bring in a revenue of $2,780,845 in the first five years after its opening. Its estimates are that the Lea county field will yield oil for 25 years, at a lower rate per well than in the Winkler field in Texas. This extension to the Lea county field, according to the Interstate Commerce Commission, will practically be an extension of the line the Texas & Pacific was authorized to build into the Winkler field.

In the first year the Texas & Pacific expects to haul 5000 cars of crude oil, 500 cars of natural gasoline, 300 cars of carbon black, 1400 cars of pipe, machinery, derrick and tank material and 300 cars of lumber.

The Santa Fe estimated that in the first year it would haul 8800 cars of oil and materials from and for the oil field. It expected to handle 4000 cars of fuel oil and gas oil to Texas points and some crude oil to Texas ports.

The Shell Petroleum Corporation, Continental Oil Co., Skelly Oil Co., Rio Grande Oil Co., Phillips Petroleum Co., and the Prairie Oil & Gas Co. took an active part in the fight.

The oil companies, some of which participated only as witnesses not having made themselves parties to the case, lined up in favor of the trunk line on which they have refineries or other interests. One company intervened in the fight in behalf of both companies, asserting that the lines of both were needed. The trunk lines conducted the fight through subsidiaries, the Texas & Pacific subsidiary being the Texas-New Mexico Railway Co. and the Santa Fe subsidiary being the South Plains & Santa Fe Railway Co.

Open Suit to Cancel Elk Hills Leases

LOS ANGELES, Dec. 19.—The U. S. government opened suit Dec. 2 against the Pan American Petroleum Co. to cancel three oil leases held by this company in the Elk Hills naval reserve, Kern county.

The case involving 600 acres with a potential value of $15,000,000 is being held in Los Angeles before U. S. District Judge Norcross of Nevada. Former Senator Pomerene of Ohio, chief of government counsel will endeavor to show that the leases in question were granted as a result of a conspiracy between former Secretary of the Interior Fall and E. L. Doheny, which caused the Supreme Court of the United States to cancel

the main leases in the Elk Hills reserve.

Through its purchase in 1928 of the Pan American properties, Richfield Oil Co., also became interested in the suit and is expected to help the defendent counsel in the effort to prove that no conspiracy existed in the case under discussion.

In the opening address, government counsel charged that the leases had been obtained illegally during the time Fall was Secretary of the Interior, even though Congress confirmed the granting of the leases. This act is claimed by government counsel to be illegal as the authority delegated to the secretary and thereafter to Major Denby of the Navy Dept., who negotiated the leases, was contrary to law, even though made with the approval of President Harding.

During testimony of E. C. Finney, Assistant secretary under Fall, it was brought out that a lease of 421 acres granted to Pan-American and one of 63.2 acres, granted to United Midway Oil and Land Co. and later acquired by Pan-American adjoined a lease granted to the respective companies under competitive bidding. The consideration to the government being in each case 55.5 per cent of the oil produced.

Later on, on Nov. 22, 1921, both companies asked that the royalty be reduced to a sliding one of from 12.5 to 25 per cent depending on the grade of the oil. On Dec. 14 of the same year these companies were granted the leases, the royalty on this strip being fixed at 12.5 to 25 per cent.

It is now the government's contention that these leases were granted to offset the losses claimed to have been suffered by the companies as a result of the 55.5 per cent royalties on the adjoining leases. The defendants claim that the contested leases were granted to protect the acreage granted in the first lease from drainage by wells outside the reserve.

B. of M. Alumni Meet at Chicago

CHICAGO, Dec. 19.—H. C. Fowler, acting chief engineer of the Petroleum and natural gas division of the U. S. Bureau of Mines, discussed the program of research, current and tentative, of that organization with alumni and pre-alumni of the Division, at the annual alumni breakfast during the A. P. I. meeting.

H. H. Hill, ex-Chief, gave a short resume of the recent history of events of vital concern to the division, and expressed the hope and expectation that the work of the group in future will be quite as useful to the industry as have the accomplishments of the past. A. W. Ambrose, also a well-known ex-Chief, better known as "Peter" Ambrose, paid compliment to the quality of the personnel now composing the division's staff, and pointed out that, while the field of greatest service may have changed as time has passed, the possibilities for aiding the industry are probably greater now than ever.

Mr. Fowler outlined, for the information of the alumni present who are not now in close touch with details of the work, the present purposes of the division, the results he and his collaborators hope to achieve, and some of the difficulties experienced during the year.

Regarding the type of investigations which the division could make which would be of special value to the industry, Dr. W. F. Rittman stated that in his opinion invaluable work can be done in collecting, tabulating, interpreting, and disseminating the results of investigations by the various agencies of the industry.

As an example of the far-reaching value of such work Dr. Rittman referred to the recent publication by the American Petroleum Institute of the volume prepared by H. C. Miller on the function of natural gas in increasing the recovery of oil from sands. This volume presents and interprets for the first time the great mass of data collected by members of the Institute on this subject, making it available in easily digestible form to the industry.

Present members of the division staff who attended the breakfast were H. C. Fowler, acting chief; A. J. Kraemer, assistant on refining problems; Jno. S. Desmond of the Bartlesville station, engaged in the study of oil recovery methods, and H. C. Miller, senior petroleum engineer of the San Francisco station.

Alumni present were: H. H. Hill, Standard Oil Co. of New Jersey; W. W. Scott, Humble Oil and Refining Co.; C. E. Beecher, Empire Oil and Refining Co.; R. R. Matthews, Battenfeld Grease & Oil Co.; A. W. Ambrose, Empire Oil & Refining Co.; J. H. Wiggins, Tulsa; W. F. Rittman, Carnegie Institute of Technology; T. E. Swigart, Shell Oil Co.; D. B. Dow, Indian Terr. Ill. Oil Co.; W. E. Perdew, Winkler-Koch Eng. Co.; A. L. Foster, NATIONAL PETROLEUM NEWS.

HOUSTON, Dec. 20.—Mack McNally, veteran construction engineer of the Pure Oil Co., has a force of 50 men working on a third battery of 10 lease storage tanks of 1000 barrels capacity each at the Pure's Jarman discovery well, near Van, in Van Zandt county, East Texas. When completed this battery will give the Pure 30,000 barrels of lease tankage. A short pipeline is being built to near Grand Saline, Van Zandt county, for tank car loadings of crude.

Oil Well Pumping

The pumping of oil wells is not a closed subject on which everything has been learned. New deeper wells, large volumes of salt water and crooked holes, bring new problems. Engineers of our industry also are learning how to lift oil more economically from old shallow sands.

National Petroleum News has presented to its readers a large number of articles describing advances in the science of oil well pumping.

For your file reference we list 30 oil well pumping articles that have been published in National Petroleum News since 1928:

1929

Pumping deep crooked wells discussed — Aug. 21, p. 38
Valve travel problems in deep well pumping — Aug. 14, p. 59
Field foreman tells of economical operation of small wells — July 31, p. 60
Deep well pumping confronts Tonkawa producers — June 26, p. 40
Economics of pipe line pumping — Feb. 6, p. 54

1928

Pump cutting agent breaks emulsion — Dec. 12, p. 58
Rod troubles in deep pumping solved by combination pump and flowing device — Nov. 7, p. 37
Automatic oil well pump for small wells — Oct. 17, p. 52
Centrifugal "time" clutch pumps deep California wells — Oct. 10, p. 60
Pumping problems facing Winkler operators — Sept. 12, p. 42
Special well hook-ups designed for Winkler — Sept. 12, p. 44
Portable emergency pumps for pipe line service — Sept. 12, p. 54
Multiple pumping of oil wells — Aug. 22, p. 51; Aug. 1, p. 47
How power pumping cuts costs on Kansas lease — July 11, p. 99
Selection of power equipment for oil well pumping — June 27, p. 81; June 6, p. 91; May 23, p. 49; Apr. 25, p. 69; Apr. 18, p. 24
Co-operative pumping of deep wells in Cromwell — June 12, p. 60
Fluid displacement pump used with gas lift — Apr. 25, p. 100
Application of power on oil well plunger pumps — March 21, p. 63; March 7, p. 67
Review of developments in plunger pumping equipment — Jan. 4, p. 55; Dec. 7, 1927, p. 93; Nov. 30, 1927, p. 53; Nov. 9, 1927, p. 65; Oct. 26, 1927, p. 67.

Back copies of any of the above issues are 25c a copy. On issues that are exhausted, photostats will be furnished at 40c per page. Libraries in the larger cities generally keep back files of National Petroleum News complete.

National Petroleum News
Main Office: 1213 West Third St.
Cleveland, Ohio

Drilling In at Oklahoma City Offers More Than Usual Excitement

By John Power
N. P. N. STAFF WRITER

OKLAHOMA CITY, Dec. 19

DRILLING in. All of the romance, excitement, and glamour of the oil fields reach a peak at this time. Centered in the few hours the process takes, there is a feeling of tension which no onlooker, regardless of how much or how little the well may mean to him personally, can help but feel.

This is the time when the results of months of labor and the expenditure of thousands of dollars will be learned; it is the climax of what is always a more or less dramatic situation, and it is looked forward to by workmen, operator, royalty owner, and innocent bystander alike. Drilling in is drilling in, and there is nothing else like it in the oil business.

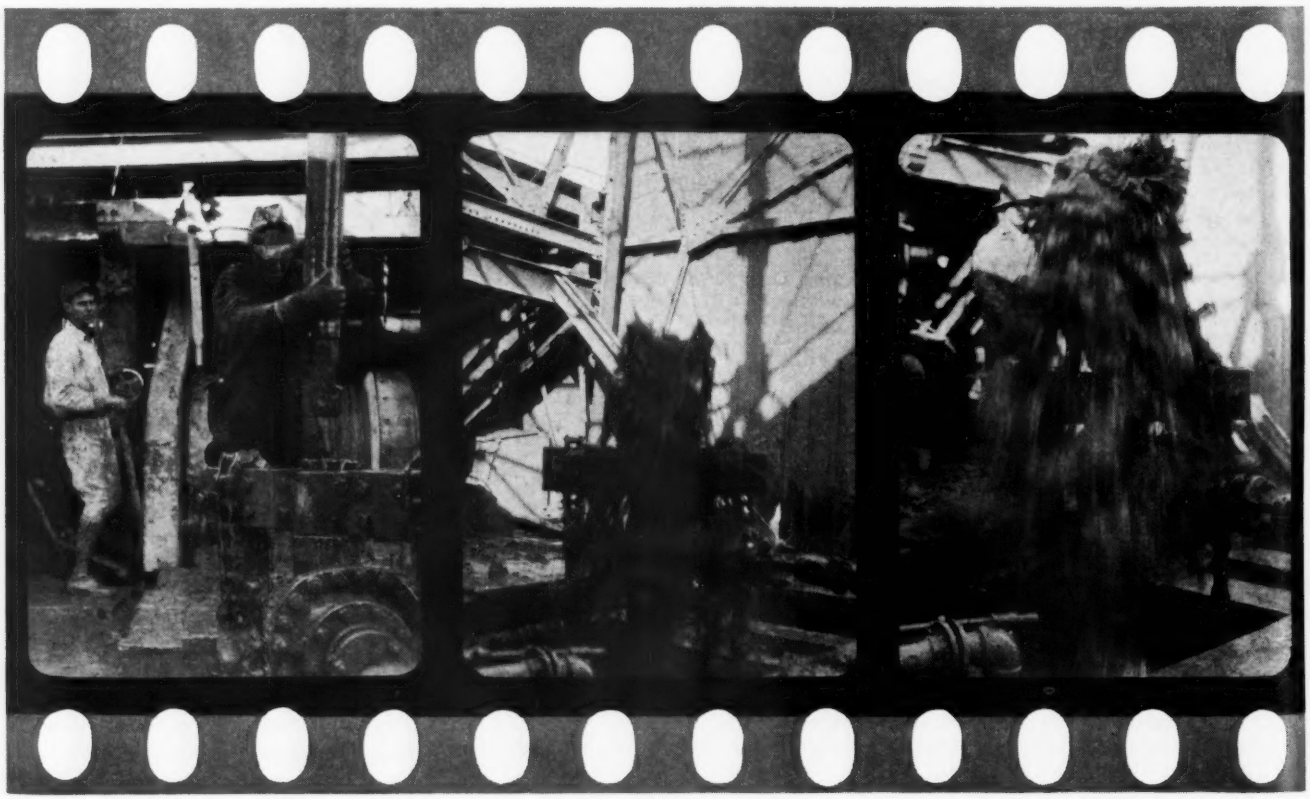
In the Oklahoma City field the operation becomes especially colorful. The size of the wells, the great depth of the producing horizons, and the field's proximity to a large city are contributing factors which go to make the completion of an Oklahoma City well an event well worth the seeing.

As an oil field, the Oklahoma City area has presented the operators with many problems, which although perhaps not new to the industry, have had new angles in their solution which have made of them more than just the old problems dressed up. Financial, geological, mechanical, the difficulties which the field has so far presented for solution have been perhaps greater than those provided by any other field in the state.

No matter how strong a company may be financially, there is little or no fun for any one in putting $100,000 or more in a hole in the ground —and leaving it there. The selection of locations has, therefore, had to proceed slowly and carefully, for very many dry holes drilled to 6500 feet can make an impressive dent in anybody's drilling appropriation.

Geologically, the field has been, and, to a considerable extent, continues to be something of an enigma. When production was first encountered in the Indian Territory Illuminating Oil Co.-Foster Petroleum Corp. discovery well it was generally thought that the Hunton lime was the productive formation. The action of the well, and subsequent drilling convinced practically every one that it was the Siliceous lime that was paying off, and that a tremendous uplift was responsible for the absence of the Wilcox, Simpson, Viola, etc. It was expected that drilling on the flanks of the Siliceous lime structure would discover these formations in place, with the Wilcox possibly productive.

Flank, or edge drilling, while yielding the hoped for production, is not generally believed to have revealed any Wilcox sand. The production which has been found, and there have been some elegant wells completed, has been from what has been called



Bailing out the mud *Here she comes* *Higher*

the "detrital" zone, an unconforming section of washed-in materials. Big gas, up to 100,000,000 cubic feet, has been found in this formation, and always at tremendous pressures.

Drilling along the south edge of the lime production has found an increasing sand body, also called at first the detrital. There is, however, evidence that the bottom part of the body may be Simpson, in place, indicating that the long looked for Wilcox may not be far away. Indeed, there is an increasing school of thought whose adherents incline to the belief that one or two of the sand wells now producing are actually in this formation. The mechanical problems have encroached on the territory of the geological, and have made the recovery of satisfactory samples extremely difficult.

Peculiarly enough, the great depth of the field has not been as troublesome as might have been expected. Drilling has been getting progressively deeper for some time, and it was no particular trick for a good driller from Seminole to make 2000 feet more hole than he had drilled in that area.

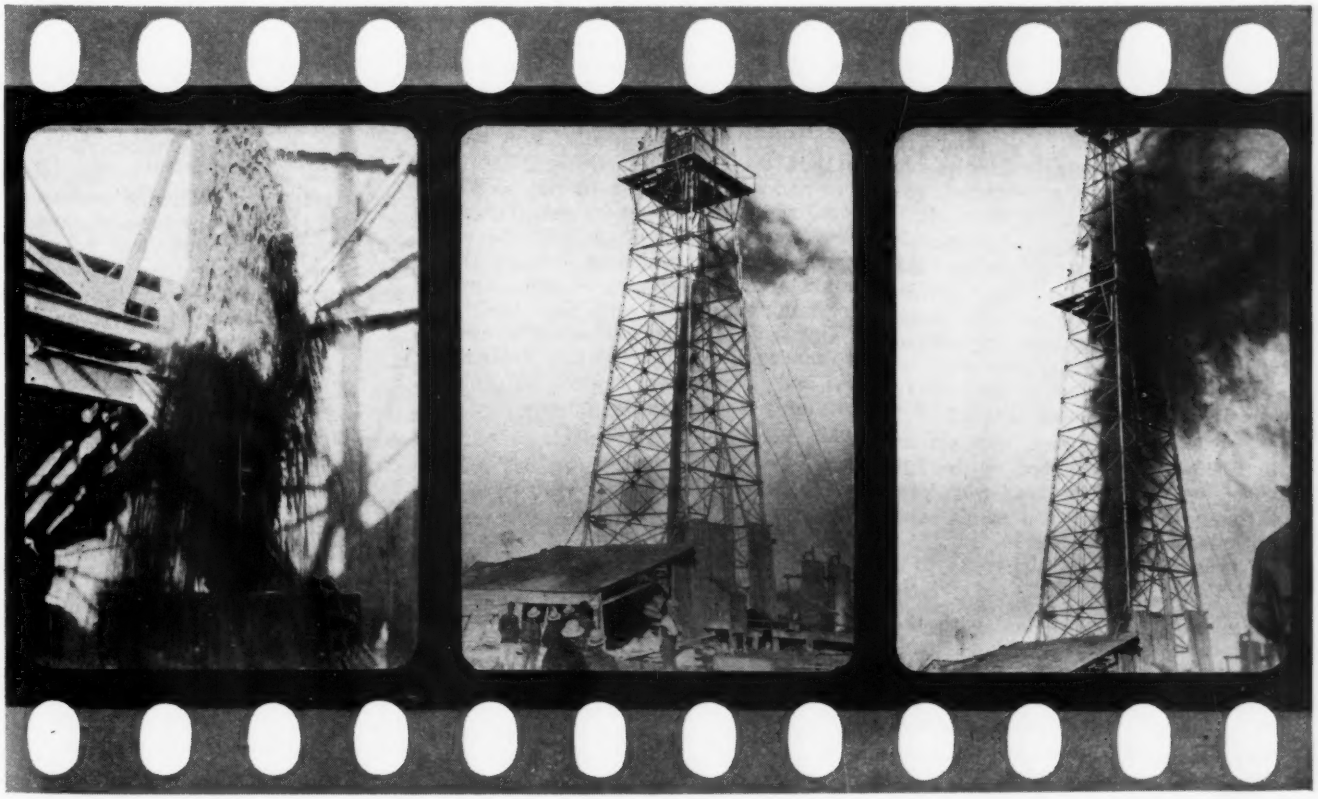
The fact that the beds were not particularly steeply dipping, along with what had been learned the last year during the development of the junior members of the Seminole group about drilling straight holes, kept this particular problem from cropping up very seriously.

It is the big gas, which rips and roars and bucks its way up the hole from the top of the lime, and from the upper part of the detrital zone which causes most of the trouble. Of course the added depth of the wells makes working with them to control this difficulty just that much more troublesome. But it is the gas, and the pressure at which it is found which calls for careful and intelligent operating.

Enough wells have been completed in the field to take care of the pioneering that has to be done in the overcoming of the new problems which all oil fields present. A method of procedure which might be termed "good practice" has developed from the experience, and troubles encountered in drilling in the earlier wells, until at the present time, the completion of the wells is not the more or less haphazard thing it was at first.

N. P. N. Staff Photos

In the tanks. Left to right, Chief, the gager; H. M. Stalcup, vice-president in charge of production; J. S. Freeman, assistant, all of Skelly Oil Co.



Still making mud *At the thribble board* *There she blows*

To begin with, more coring is being done now than formerly. Typical of the more recent wells to be completed is the Skelly Oil Co. No. 1 Hoops, the farthest southeast well of the field. It is a sand producer rated as good for 25,000 barrels daily.

In this well the detrital zone was topped at about 6240. A core barrel was run at 6250-61, with one foot of formation being recovered. The upper half of this was greenish gray shale with included sand, while the bottom half was dolomite with an odor of gasoline. A careful watch of the rotary cuttings was kept, and the well was deepened in a reduced hole, using 3-inch drill pipe.

The core barrel was run again at 6300-6310, getting an 8-foot recovery. The drilling continued alternated with coring until a total depth of 6395 feet was reached.

During the coring a gas sand was noted at 6251. Between 6260 and 6351 the formations recorded were greenish gray shales, with included sand, gray dolomite with included sand, and some green shale. Practically no free brown sand was found in either the core or the rotary cuttings between these depths.

At 6351 the first soft, saturated brown sand was cored. It showed hard breaks of dolomitic, tightly cemented sand, although the last 39 feet of the coring showed good sand, highly saturated. From 6394 to 6395 the sand was dolomitic, lighter and harder at the base, but still showed a saturation. There being no information as yet as to where the water line might be in this part of the field, it was decided to stop and make the well, which the saturated condition of the sand showed might reasonably be expected.

In some of the larger gas wells of the field which also have produced oil, it was particularly noticeable that the greater the amount of gas produced with the oil, the less oil.

This was not necessarily attributed to structural conditions but to the back pressure on the oil sand which the upper gas put on it. In addition to holding back the production, permitting an excessive amount of gas to be produced was considered extremely wasteful—also illegal.

In this well the 6-inch was set at 6335 feet, and cemented with 225 sacks of cement. This was completely through the upper gas sands, and permitted the gas in the oil sand, of which there is a great plenty, to produce the oil.

The plug was then drilled with the small rotary, and the hole kept loaded with mud. When the plug had been drilled the drill pipe was removed and the rotary torn down.

The surface connections had been installed while the cement was setting. Two traps had been set close to the well, with two lead lines from the "Christmas tree" at the well head to each separator. The "Christmas tree" connections at the well head were regular, a 6000-pound master gate being installed on the 6-inch, with all connections above this being 3000-pound stuff.

A cross-tee was made up on a short nipple in the top of the master gate, and lead lines were run to the traps. Four risers set about 200 feet from the separators were put up to handle the gas. Casing clamps were set on the belled nipple made up in the top of the connections, the clamps being chained down and tightened by means of turn buckles fastened to the sills.

A sand line was spooled on, and then the bailing began. It took some five hours time to bail the well in, although a few hours after bailing started the fluid began rising in the hole fast enough to keep about the same level. Shortly before the well came in the mud fluid began rising faster than it could be bailed out, and it kept one roughneck busy putting flags on the sand line to mark the place where the fluid stood.

Closer and closer to the top of the hole rose the mud, until barely a minute was needed to make a round trip with the bailer. And then "Here she comes." A column of mouse colored mud began to rise from the hole, slowly at first, but faster and faster as the load was lightened. Up to the thribble board and even higher rose the fluid—still mud.

And then, all of a sudden, the hole had cleaned itself, and the fluid column rising in the derrick turned to a russet color, and under the combined pressure of some 50 million feet of gas and a strong south wind went drifting and spraying off toward the location north. The well was in.

After that but little remains to be told. Given a few minutes open flow so that the well may clean itself of mud and a considerable portion of the loose sand, the master gate above the connections is closed, and the oil turned into the tanks by way of the separators. Gages are taken every few minutes at first, and then hourly.

The usual remarks about the well are made, the bets on its size are paid off, and the crowd thins out, until soon only those whose duties require them to be present are left.

West Virginia County Surveyed

MORGANTOWN, W. Va., Dec. 19.—A detailed survey of Pocahontas county, W. Va., as to geologic structure, has been published by the West Virginia Geological Survey, Morgantown, under the direction of David B. Reger, assistant geologist in charge.

Among other geological data, the book contains physiographic and stratigraphic descriptions of minerals, including oil, gas, coal, etc., and also contains a separate case of topographic and geologic maps. Price is $3.00.

New Equipment

The Autocar Co., Ardmore, Pa., manufacturer of motor trucks, has announced the appointment of J. M. Van Horn as manager of the company's factory branch at Cleveland, O., according to H. M. Coale, vice president in charge of sales.

* * *

Sterling Motor Truck Co., Milwaukee, Wis., has opened its new building in Pittsburgh, Pa., at Liberty Avenue. and 36th St. The building affords larger quarters and is of brick and steel construction with 25,000 square feet of floor space, including salesroom, office, shop and stockroom.

Sales have increased 50 per cent for the year ended Oct. 31 over the past year, according to H. C. Keenan, vice president in charge of distribution.

* * *

Combustion Engineering Corp., 200 Madison Ave., New York, in a comparative performance test of 1500 horsepower boiler and 800,000 pound steam generating units, obtained for its No. 4 boiler a rating of 532 per cent for 72 hours' operations, run at capacities of 108,000, 170,000 and 240,000 pounds of steam per hour. The test was run at the East River station of the New York Edison company. Equipment used was several years old. These tests will be used for comparison in the future with similar tests of new equipment at this same station.

The complete report of the test is told in a pamphlet written by W. H. Lawrence, chief operating engineer of the New York Edison Co.

* * *

An oil treating machine for treating the fuselage structure of an airship against corrosion, has been designed and is being used by an airplane company at Marshall, Mo.

The Nicholas-Beazley Airplane Co., Inc., the developer, claims that the time of this process is thus reduced from 45 minutes to 45 seconds and a 50 per cent saving in materials effected according to "Aviation."

* * *

Fruehauf Trailer Co., Detroit, has bought the Warner Mfg. Co. of Beloit, Wis., also a manufacturer of truck trailers. The identity of the Warner company, which has distributors in more than 20 large cities, will be maintained, said Harvey C. Fruehauf, president of the Fruehauf company. However, executive offices and production activities were moved to Detroit Nov. 15.

Mr. Fruehauf said acquisition of the Warner company placed his company in a strong patent position.

Cracking Methods Studied Through Eyes Of Refiner of Russian Crude

By Dr. Leopold Singer, Vienna

Translated from Petroleum Zeitschrift

Part 1

SEVERAL years ago, Professors Sachanow and Tilitschejew published in a Moscow chemical journal an investigation of cracking, the translation of which into German was made possible by the Universal Oil Products Co.

These authors have now brought out a second article of extraordinary interest in which they discuss cracking problems from the standpoint of the Russian petroleum industry in their relation to the particular market and export conditions of Russia. The article of Professors Sachanow and Tilitschejew is reprinted below:

The great demand for motor fuel in the United States has resulted in a tendency in the development of cracking technique to aim at the greatest possible yield of gasoline and on this account the charging stock generally has not been crude oil or topped crude but petroleum distillates which give the greatest yield of gasoline with the smallest formation of coke.

These operating methods cannot be blindly copied for Russia since different conditions prevail. The cracking of distillates demands the construction of more stills for topping crude and in cracking by this method a large yield of practically useless tar would be produced. For example, the distillation of a paraffin base, Grosny fuel oil gives 30 per cent of a paraffin tar that is hard even to burn under the stills. So only 70 per cent of the fuel oil would be converted thereby, while the 30 per cent residue is sacrificed through its conversion into vicous and unwanted tar.

The direct cracking of topped crude and heavy oil, without previous distillation, to produce distillates exactly suited for cracking, is the chief problem of petroleum technology.

The American method of intensive cracking of reduced crude and heavy crude oils with large coke formation as in the Dubbs process is not adapted to Russian conditions; light cracking would be more profitable because in that way, besides the cracked gasoline, a fuel oil of good quality is obtained, which in the Grosny district, is most important. From this standpoint, the cracking of reduced crude and heavy crude is still an unsolved problem.

Mild cracking has in general been studied very little or not at all up to date. Pursuing the subject further, cracking processes may be divided into three classes:

1. Those with the principal aim of producing fuel oil.

2. Those aiming at production of gasoline and fuel oil.

3. Those producing gasoline and coke.

By the third method, the greatest yield of gasoline is obtained. But this is accompanied by great losses through the formation of fixed gases and the conversion of the residue into a coke, which, on account of its poor quality, is difficult to market.

Egloff and Morrell have stated that in cracking heavy and reduced crude oil by the Dubbs process; for example, Panhandle crude, 65.3 per cent of gasoline and 17.1 per cent of coke, gas, and oil are produced. If a heavier oil is cracked, such as Ventura crude, about 57.2 per cent gasoline is produced, 15.8 per cent residue and the loss, plus gas, plus coke, is about 27.2 per cent.

While these methods of cracking might be profitable in times of heavy demand for gasoline, this would hardly be the case in times like the present when the price of gasoline is going down and the price of fuel oil is more or less stable. And particularly is this so under the circumstances in Russia, where the gasoline export market depends upon factors which are out

Fractionating Columns

ARTICLE 4 in the exclusive series Colonel Burrell is writing for NATIONAL PETROLEUM NEWS readers on the application of science to refining operations deals with the modern fractionating tower.

Every kind of tower in common use in refineries is discussed: packed columns; plate columns; perforated plate columns; bubble cap and plate columns are described and their performance and efficiency compared.

Functions of fractionating towers, what they can be made to do in the refining of crude and what they will not do, are discussed.

Methods of operating, character of feed, manner of introducing feed, reflux ratio, method of introducing reflux, importance of controlling temperature, and so on, are explained.

Colonel Burrell thus sums up the work of a fractionating tower:

"For the column to rectify an oil there must be enough heat furnished to vaporize the oil and force the vapor up into the column and to force overhead the product desired.

"The still, whether a shell still, an evaporator or the column itself, must have enough vapor disengaging space for the work it has to perform.

"Further, if columns are too small, they do not contain enough oil to take care of temperature changes. As a consequence temperature control is difficult. The oil surges up into the column with sudden increases in temperature."

(Article 4 appears in the next issue of National Petroleum News).

of the hands of the refiners, while a boundless market exists for fuel oil.

By using the second of the abovementioned cracking methods, only about 6 per cent on the average of gas and coke are made. This style of operation is flexible. If, for example, gasoline is the chief product desired, then the oil will be cracked more intensively in order to increase the yield and so the quality of the fuel oil, because of its coke content and its increased viscosity, is inferior.

If it is desired to make both gasoline and fuel oil then the yield of gasoline is reduced and fuel oil of a better quality is obtained. At least theoretically, it is possible, under certain market conditions where fuel oil is more desirable than gasoline, to carry on the process to improve the quality of the charging stock as to viscosity and cold test, so that it is better than before as a fuel.

Under such conditions, in order to increase the production of a plant containing only a limited number of units, it may be profitable to reduce the gasoline yield by reducing the intensity of cracking. However, holding down the gasoline yield too far works against the quality of the fuel oil, because this is unsatisfactory when too little gasoline is produced. This second method of operating cracking processes is limited on the upper end by the amount of coke produced, and on the lower end, by the viscosity of the fuel oil produced.

The lower limit of the second cracking method, whereby fuel oil is the chief end product, leads to the first mentioned method by which the cracking is less intensive; in which fuel oil is the only product and by-products are not taken off; a process which may be so operated that the light cracking improves the quality of the original charging stock, particularly its viscosity and cold test.

An example is Kalgua (Russian) crude oil. Light cracking reduces its viscosity about 50 times (at 20 C.), and also reduces its specific gravity and the content of gum like material. This method can be used generally on most crudes and reduced crudes which have a high tar content, high viscosity and high stiffening point.

Because of the short time of cracking it is practical by this method to get a high volume of material through the cracking unit.

The different above-mentioned cracking methods naturally, each require different apparatus. For the first cracking method, any one of the ordinary standard cracking units is satisfactory. Care must be taken that the material be cooled off immediately after leaving the reaction chamber, for which purpose heat exchangers, which permit of recovery of an important part of the heat, are adapted.

For the second method, in which only a small amount of coke is formed, the Cross and the Dubbs processes are the most practical. Intensive cracking with the formation of a great amount of coke is only possible with the Dubbs process.

Among other characteristics of the Dubbs process is the great size of its reaction chamber which can hold 30 tons of coke, while the reaction chamber of the Cross and Vickers installations cannot take over 5 tons, so that the Dubbs process permits a considerable amount of coke to be accumulated before it is neessary to shut down the unit for cleaning.

The choice of the cracking process depends very much on market conditions. Certainly a change in the market conditions will call for a change in the cracking operation. For this reason it is very necessary, in so far as possible, to study the cracking properties of the petroleum products and be in position at any time to meet market requirements without difficulty.

What has been shown up to now in laboratory investigation in this direction is insufficient in itself and also because the whole question has been approached from an entirely one-sided standpoint and consequently, the necessary data has not been obtained.

A standard method for this purpose would mean an important step forward. Such a method is the more necessary inasmuch as cracking today is one of the chief operating methods in the industry as well as the topping process and in the United States at the present time, the scope of the cracking process is being widened in connection with the manufacturer of kerosene and lubricating oil.

The investigation of petroleum products as to their cracking characteristics, must be followed out in the same detail as are the customary determinations of other properties such as contents of gasoline, kerosene, etc. . . . The authors, in their investigations of cracking, have considered it necessary to work out an investigation method which would show all the characteristics of the cracked oil.

One should be able in investigating cracked products, to get far-reaching data which would make it possible to establish the most rational cracking method for a particular set of conditions. Carrying it out further, the first cracking method should be used to produce marketable fuel, the second for the production of gasoline and marketable fuel oil and the third to produce gasoline and coke.

A complete investigation of the cracking possibilities of the petroleum product, would embrace tests under all three of the methods, but in certain cases, where only one of the methods would be of interest, the method would have to be correspondingly modified.

Standard Method for Investigating Cracking Properties of Petroleum Products:

The authors have broadened and made more complete the results of their earlier work. In their work they used a new apparatus designed to operate under 50 atmospheres of pressure and 500 C. (932 F.) temperature. The material is iron, with wall strength 12 millimeters. The still head was fastened with ⅝-inch bolts and copper packing was used which had given good service in use. The apparatus was tested at 150 atmospheres at room temperature.

Temperature

Great attention was devoted to correct temperature measurement because errors in this influence the results very largely. A temperature of 425 C. was chosen as the standard temperature for the cracking investigation, because at this temperature, the time of cracking is measured by tenths of minutes and one can so maneuver that he is in position in different experiments to vary the intensity of cracking.

At 400 C. the cracking intensity is too low and again at 450 C. it is too fast to make possible the studying of the individual phases of cracking. At the temperature of 425 C. it is easier to translate every other temperature, correcting the measure of cracking. Leslie and the authors, have shown that the cracking yield doubles with every 10 C. temperature rise.

Time Element

As is mentioned in another place, one must make allowance for the heating and cooling of the oil and so arrive at a corrected time of cracking.

To simplify this calculation, a table is serviceable, which will show the changes in the rapidity of cracking with changes in temperature. This table is based on the law that the rapidity of cracking doubles with each 10 C.

Temperature Changes Degrees Celsius	Corresponding Changes in Cracking Rapidity	Temperature Changes Degrees Celsius	Corresponding Changes in Cracking Rapidity. 1.1 Time
1	1.1 Time	21	4.3 Time
2	1.2 Time	22	4.6 Time
3	1.2 Time	23	4.9 Time
4	1.3 Time	24	5.3 Time
5	1.4 Time	25	5.7 Time
6	1.5 Time	26	6.1 Time
7	1.6 Time	27	6.5 Time
8	1.7 Time	28	7.0 Time
9	1.9 Time	29	7.5 Time
10	2.0 Time	30	8.0 Time
11	2.1 Time	35	11.3 Time
12	2.3 Time	40	16.0 Time
13	2.5 Time	45	22.6 Time
14	2.6 Time	50	32.0 Time
15	2.8 Time	55	45.0 Time
16	3.0 Time	60	64.0 Time
17	3.2 Time	65	90.0 Time
18	3.5 Time	70	128.0 Time
19	3.7 Time	75	181.0 Time
20	4.0 Time		

Pressure

Pressure as such does not influence the yield of cracked products but it works indirectly, inasmuch as at different pressures, different quantities of distillates are distilled off in the reaction chamber, so that a part of the products leave the reaction chamber and thereby the cracking conditions are influenced.

Looked at from this viewpoint, the pressure adopted will fluctuate according to the raw material and the cracking method used. With light cracking of heavy petroleum products, a pressure of 10 atmospheres and often less will serve. If gasoline and fuel oil are desired from heavy petroleum products, a pressure of the order of 10 to 20 atmospheres will be sufficient and in the cracking of kerosene about 60 atmospheres pressure is necessary.

We used in our experiment, first a pressure of 10 atmospheres, because apparatus designed for cracking at high temperature was lacking, but later when we got such an apparatus, the behavior of paraffin base Grosny fuel oil was studied at a pressure of 40 atmospheres. The difference in the results was very small so that the results of the experiments at 10 atmospheres pressure gave more or less closely the cracking characteristics of heavy petroleum products generally.

The light cracking of oil products is accompanied by a reduction of the flash point and a general forming of carboids and on this account cracking conditions in this method are determined by two factors. The time of cracking must be long enough to accomplish the desired reduction of viscosity or cold test, and on the other hand must not be so long that coke is formed and a lower flash point results.

WITH certain petroleum products, for example Kaluga crude oil, these limits are quite far apart. In such cases the time of cracking can be somewhat varied, which makes the operation considerably easier because the quality of the fuel oil is not influenced by small temperature variations or changing the time of heating.

In other cases, however, for example with the Grosny residue and heavy paraffin base residues, these boundaries overlap and before the viscosity of the material has been reduced far enough the formation of coke begins. It is indicated by this that for the first cracking method, the foregoing material is not adapted.

It is generally necessary to make several experiments of light cracking with variations of the time element to determine the characteristics of the fuel oil and the carboids obtained and these are generally carried out as follows:

One kilogram of the material to be investigated is cracked at 425 C. (797 F.) and held 10 to 15 minutes at 10 to 20 atmospheres. Generally, no pressure distillate is formed under these conditions (and if any is, it is in very small quantities and is then combined with the chief product of the cracking). First, viscosity flash point and carboid content of the cracked product and the results of the analysis point the way in which further investigation could be pursued.

For example, a Kaluga crude oil has been cracked for 22 minutes at 10 atmospheres and 415 C., which corresponds to 11 minutes of cracking at 425 C. The product obtained had the following constants, E by 20. 12.66, flash point, 50 degrees C., carboids, 0.09 per cent calculated on the outgoing material.

As the results were entirely satisfactory, (the viscosity at 20 C. declined from 500 to 12 and carboids were practically not present), two further experiments with different time were carried out (experiments 98, 100, 103), the results of which are given in the following table:

Cracking Time in Minutes	Engler Degrees at 20C	Carboids % on charging stock	Flash Point
13	34.29	0.11	64
22	12.66	0.09	50
32	8.17	0.29	41
30	.....	.....	....

Determination of Carboids

In determination of these, three or four grams of the residue of the cracking still were dissolved in benzol and filtered through a filter previously dried and weighed at 110 C. The residue should be carefully mixed before the test sample is taken. The filter residue (Karboide) is washed with hot benzol until the filtrate is light yellow or colorless, then the filter with its precipitate still at 110 to 115 C., is dried to constant weight and the result obtained is figured in per cent of the outgoing material.

Distillation and Determination of the Yield of Cracked Products

The still residue, after taking out the sample for the determination of the carboids, is combined with whatever distillate is formed and the mixture is divided into three fractions; boiling under 200 C.; 200-300 C., and residue above 300 C. Inasmuch as the weight of the residue thrown down in the fractionation is always somewhat lower than that of the quantity obtained by cracking, the weight of the fraction obtained must always be correspondingly corrected.

In cracking a paraffin base fuel oil the following are obtained: 862 grams of still residue and 111 grams of cracked distillate, altogether 973 grams. Through fractionation only 953 grams was recovered. By this experiment 95.5 grams boiling under 200 C. (gasoline) was obtained. The corrected quantity of gasoline is,

$$\text{therefore, } \frac{95.5 \times 973}{953} = 98 \text{ gram or}$$

9.8 per cent (in every case 1000 gram was taken). In similar fashion, the kerosene fraction and the residue over 300 C. are to be calculated.

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Meet the Members of Stanavo Board

CLEVELAND

READER, let us introduce to you the members of the Stanavo Specification Board.

This board represents the cooperative effort of the Standard Oil Co. of New Jersey, the Standard of Indiana and the Standard of California to produce uniform oil products for aviation which will be available to flyers everywhere.

Three grades of lubricating oil for aircraft engines are now being marketed.

The board is composed of six men, two each representing the Standard Oil Co. of New Jersey, the Standard Oil Co. of Indiana and the Standard Oil Co. of California.*

The purposes of the board, as stated in the official announcement of its establishment, are:

First, to determine the properties of the best oil products which can be produced for aviation uses and to define these properties by complete specifications.

Second, to adopt brand and grade names for the identification of the products determined to be the best, so that they may be distributed commercially under labels which will identify them anywhere in the world.

Third, to prescribe and continuously regulate tests and testing methods so rigid as to insure absolute uniformity of the products sold under its brand.

The six members of the board are: Major E. E. Aldrin and D. C. Jennings, Standard of New Jersey; Dr. D. P. Barnard and H. J. Saladin, Standard of Indiana and Captain S. S. Chadderton and Dr. J. B. Terry, Standard of California.

Herewith are photographs of the board members together with a short biographical sketch of each.

*See NATIONAL PETROLEUM NEWS, Aug. 28, '29, page 27.

Major E. E. Aldrin

E. E. Aldrin was graduated from Clark University in 1915. He received his master's degree from Massachusetts Institute of Technology in 1919 and his doctor's degree from that school in 1928. During his service as an officer of the United States army he held the successive positions of assistant commandant, Air Corps Engineering School, Wright Field; chief, Engine Maintenance, Manila, P. I., and assistant executive, Material Division, Wright Field.

From this last position, he assumed the direction of the aviation activities of the Standard Oil Co. of New Jersey. He has been technical adviser to the Guggenheim fund for the Promotion of Aeronautics and is a director of their Medal Fund. He is a director of the Standard Oil Development Co., chairman of the Fuel and Lubricants Section of the Aeronautical Chamber of Commerce, and chairman of the Aeronautic Division of the American Society of Mechanical Engineers.

* * *

D. C. Jennings was educated at the University of Virginia. Upon leaving the university, in 1916, he entered the employ of the Standard Oil Co. of New Jersey and has continuously served on its technical staff since that time. He served as assistant to the late George M. Saybolt and in 1924 was appointed assistant director of the Standard Inspection laboratories of the company. On July 1 of this year he was appointed to his present position, as head of the products division of manufacturing department of the company.

* * *

Dr. D. P. Barnard received his training and bachelor of science degree at the University of Delaware, 1919, master of science, Massachusetts Institute of Technology, 1921, and doctor of science, M. I. T. 1925.

Previously he was with the M. I. T. as research associate and for the past five years he has held the position of research automotive engineer with the Standard Oil Co. (Indiana).

* * *

H. J. Saladin, assistant manager, Technical Division, Lubricating Department of the Standard Oil Co. (Indiana), received his training at University of Michigan, College of Chemical Engineering, receiving his

Dr. D. P. Barnard

D. C. Jennings

degree as bachelor of chemical engineering in 1912.

He entered the employ of the Studebaker Corp. and was laboratory assistant in the engineering laboratory 1912-1913. In 1913 he entered the employ of the Maxwell Motor Co. and was in charge of the engineering laboratory until 1917. He was aeronautical mechanical engineer in the signal service at large, U. S. Government, United States Army in 1917, later being transferred to the Bureau of Aircraft Production, 1917-1919. From 1919 to 1921 he was in charge of technical sales at the Glenmore Co.

He entered the employ of the Standard Oil Co. (Indiana) in 1921 and up until 1926 held the position of lubrication engineer. In 1926 he was made assistant manager, technical division, lubricating department, which position he still holds.

H. J. Saladin

Captain S. S. Chadderton

Captain S. S. Chadderton, manager of the aviation division of the Standard Oil Co. of California, has followed aviation activities closely for the last 15 years. He was in the United States air service during the World War, leaving that service as a captain. During that period he had an opportunity to fly and experiment with all types of planes then in use. He was chiefly engaged in the technical development of aircraft and aircraft engines, particularly in connection with fuels and lubricants.

Captain Chadderton entered the employ of the Standard Oil Co. of California in 1914 as an automotive engineer. He is now manager of the aviation division of the Standard Oil Co. of California.

Dr. J. B. Terry, chief chemist of the Standard Oil Co. of California, received his training at the New Mexico School of Mines, the University of New Mexico, and the University of California.

He entered the employ of the Pacific Coast Oil Co. (later the Standard Oil Co. of California) in September, 1905, as assistant chemist, and was put in charge of the laboratory at Richmond refinery in 1908, where he continued until 1916, when he was appointed assistant to the chief chemist, and was appointed chief chemist of the Standard Oil Co. of California in 1922.

He is a member of various technical societies including the American Chemical Society, American Society for Testing Materials, American Petroleum Institute, Society of Automotive Engineers, Engineers' Club of San Francisco, and has for the past 10 years served on various research and technical committees of nation-wide scope.

He has been instrumental in the development of unusual petroleum products and odd uses for petroleum. His work on the preparation of highly refined lubricating oils and their use as insecticide sprays is particularly outstanding. It is due to Dr. Terry and his laboratory activities that the mineral oil spray has assumed such large volume.

Dr. J. B. Terry

Suggests Buying Gasoline On Specifications

WASHINGTON, Dec. 19.—In connection with an announcement that the revised government specifications for gasoline and other petroleum products will soon be ready for distribution by the superintendent of documents of the government printing office, the Department of Commerce tells the public that the Bureau of Standards "believes that local purchasers of gasoline in large quantities can secure better gasoline by purchasing on specification, which can be changed from time to time to meet local or temporary conditions."

This is the first time, so far as can be recalled that any branch of the government has advised the public that by calling for gasoline meeting government specifications it would "secure" better gasoline. Heretofore the government officials have maintained the attitude that the specifications prescribed for the guidance of government purchasing agents would result in the procurement of gasoline more suitable for the needs of the government than what the purchasing agents might bring in by going out and merely asking for gasoline.

They have consistently urged that the specifications were for the benefit of the government and not to be regarded as standards except and unless a state government adopted the government standards for the guidance of state purchasing agents and state inspection officers. At times it has been admitted that the government specifications might not give the government as good a product as the public was obtaining without the use of specifications.

"The various tests included in the government specifications are intended to secure good starting, acceleration and good performance, and to protect the purchaser from crank case dilution, corrosion of parts, sticking of valves, and 'vapor lock,'" says the announcement.

Gas Masks and Rubber Gloves in Use When Ethyl Gasoline Is Blended

By Allen S. James
N. P. N. STAFF WRITER

TULSA

IN THE current advertisements of Ethyl gasoline there appears a drawing representing two glass jars, two drops of liquid and two arithmetical signs. The explanation of the drawing reads: "Good gasoline plus Ethyl fluid equals Ethyl gasoline."

That brief phrase certainly is interesting. It is, in fact, beguiling. One would imagine, offhand, that the Ethyl fluid could be put in the gasoline with an eye dropper by a child, or could be poured in from a bottle —or introduced in most anyway that was convenient, just so it got into the gasoline.

Nothing could be further from the truth than such an assumption!

Let us show you through our eyes and the camera just how Ethyl gasoline is made. Any one of the increasing number of refineries which now are making Ethyl gasoline would have been a good place to witness the operation. The process is identical at each of them, because the Ethyl Gasoline Corp. has made certain rigid rules and regulations which must be followed to the letter. For convenience sake, however, we will witness a blending operation at the Producers & Refiners Corp. refinery in West Tulsa.

We left the refinery offices shortly after 1 p.m. with three men who were to do the blending. One of them carried under his arm a bundle, which contained freshly laundered, white coveralls which the blenders must wear.

The blending house and platform are adjacent to a loading track. The Ethyl corporation requires the house to be so located that the drums of Ethyl fluid can be unloaded from freight cars with a minimum of handling.

An accompanying picture shows the blending platform. The unloading rack can be seen at the right. The shed covers approximately half the concrete platform, which is enclosed by a wire fence.

The small house at the right of the picture contains a steam pump and a dressing room. The pipes leading to and from the pump are shown at the side of the building.

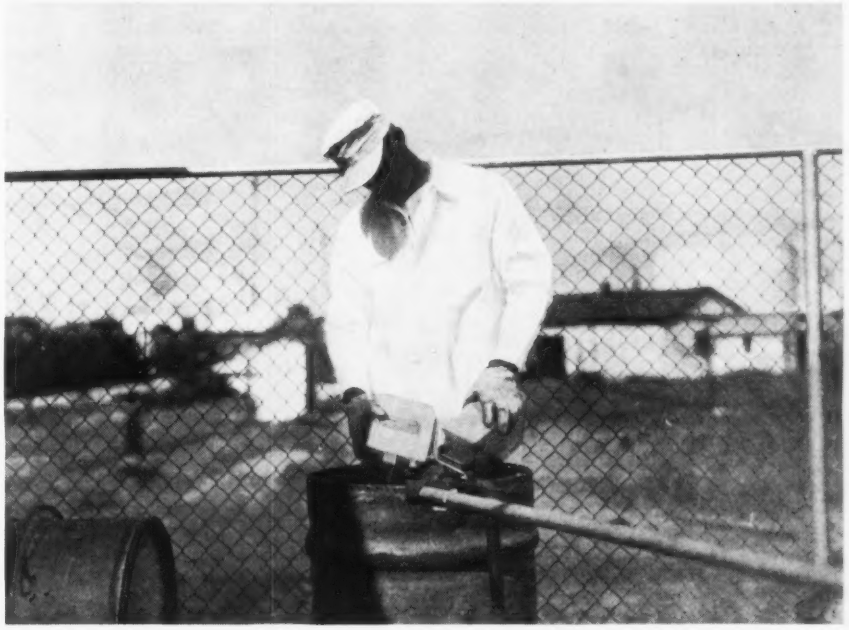
Lockers are provided in the dressing room. There also is a shower bath. On the wall is a framed chart of rules and regulations.

The workmen entered the dressing room and removed all of their clothing, placed it in lockers and then donned the clean, white coveralls, and white rubber boots.

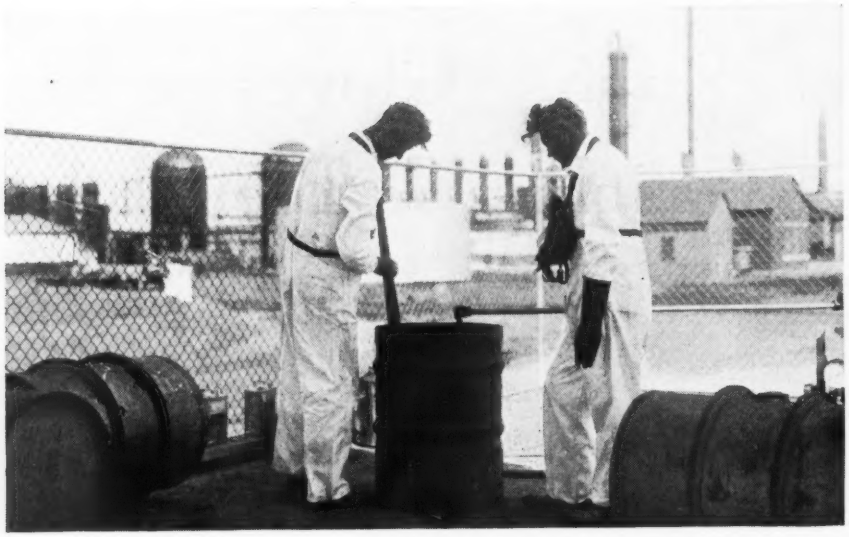
They were to make what they called a "one drum blend." That means they were to blend 120,000 c. c. of tetraethyl lead into a storage tank of gasoline in the proportion of 1.3 c. c. per gallon of gasoline.

Days before the blending, however,

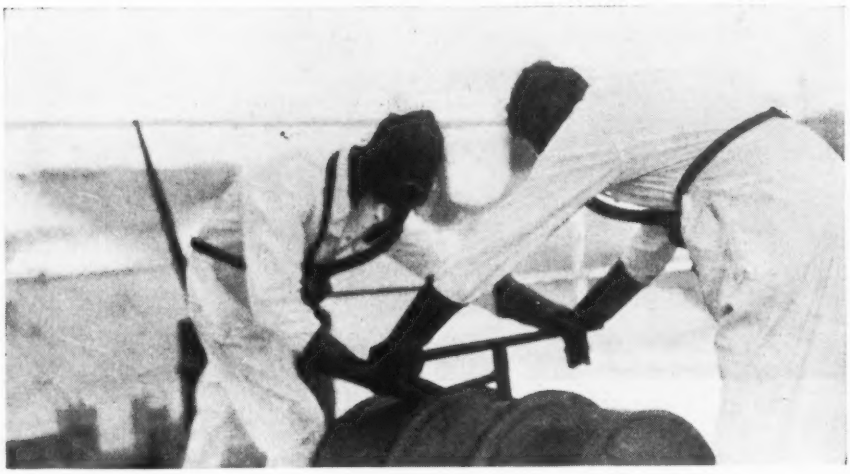
The above picture shows the unloading rack for drums at the right, the shed for the drums, the blending platform, the pump house at the right with the gasoline lines going to and from the pump, and the dressing room for the workmen.—N.P.N. staff photo



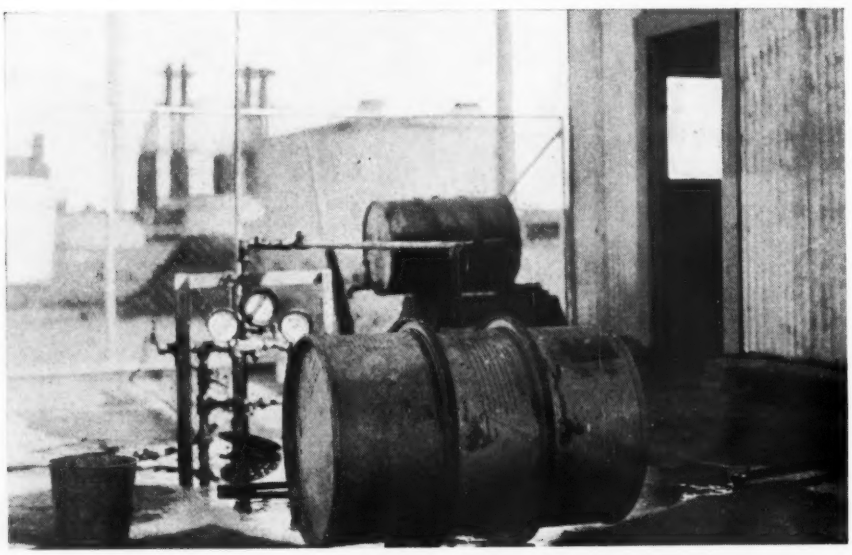
The blender is putting some benzol into a drum preparatory to mixing the dye solution. Notice his white coveralls.—N.P.N. staff photo



These two blenders are stirring the dye solution while the injector pipe is drawing it into the gasoline line and thence into the storage tank of gasoline to be blended. Since they have not opened the Ethyl fluid drum they are not wearing their gas masks.—N.P.N. staff photo



Out comes the cap of the Ethyl fluid drum. Notice the men now are wearing their gas masks and rubber gloves.—N.P.N staff photo



The injector pipe is in the Ethyl fluid drum, and the fluid is being drawn slowly into the storage tank. Swinging joints prevent leakage of the fluid. The gauges register the pressure of the steam pump circulating the gasoline.—N.P.N. staff photo

a gallon sample of the gasoline to be blended had been sent to the Ethyl corporation laboratories at Omaha for analysis. The laboratory tested the gasoline and wired the refinery superintendent the exact amount of Ethyl fluid per gallon required to bring the blended gasoline up to Ethyl gasoline specifications. The report by wire instructed the blenders to use 1.3 c. c. per gallon on that particular tank of gasoline.

After the blenders donned their white suits, they went to the nearby storage tank, and ran enough gasoline out of that tank in order to leave the exact number of gallons which would be required for the one drum blend.

These storage tanks, by the way, are no different from other storage tanks. They have gastight roofs to minimize evaporation of the premium gasoline.

Ethyl fluid is shipped in 55-gallon drums. The Ethyl corporation has taken every precaution with these drums. There are warnings stuck all over. One warning reads that in case of even a suspected leak while in transit, the drum is to be set to one side, and the Ethyl corporation be notified by telephone. The telephone number of the New York office is listed on the label.

The 55-gallon drums contain 120,000 c. c. of Ethyl fluid, which contains enough of the red dye to make the gasoline the required color provided the maximum of 3 c. c. per gallon is used in blending.

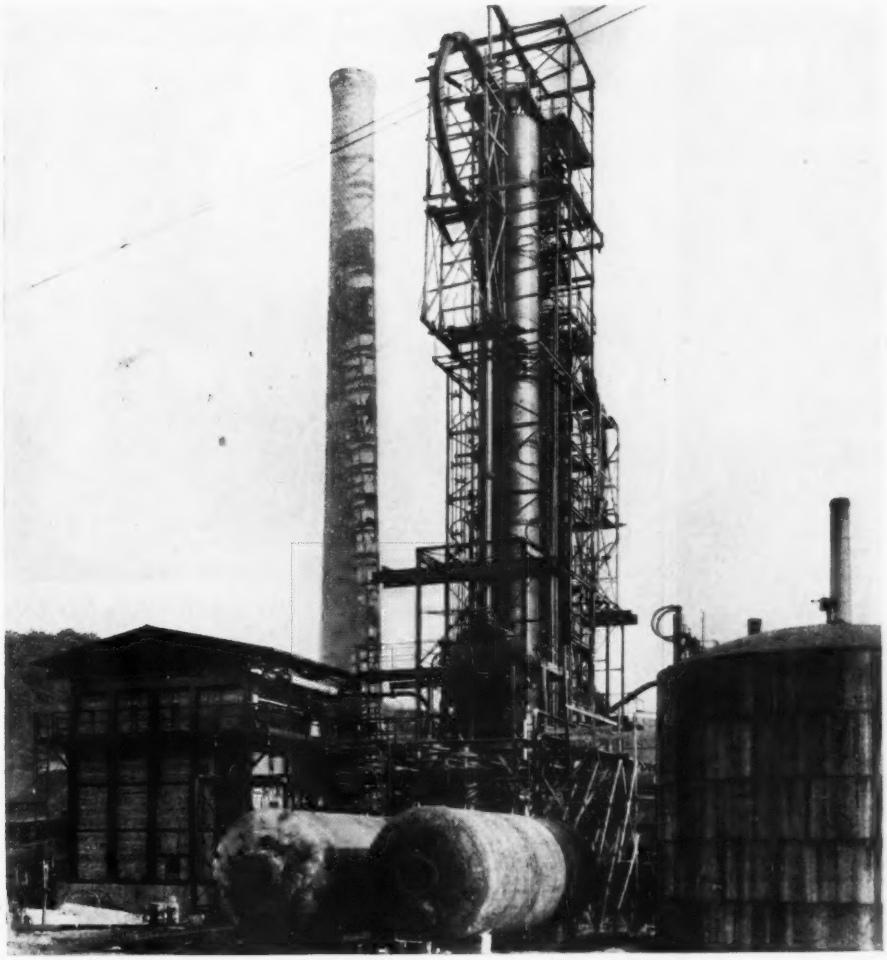
Since only 1.3 c. c. per gallon was to be used in the blending we witnessed, it was necessary to add a certain amount of dye in order to bring the color up to required specifications.

One of the blenders weighed out the dye powder and mixed it in a steel drum with benzol. An accompanying picture shows the two workmen stirring the dye solution while it was being drawn by suction into the line. The pump is so connected that it draws the gasoline from the bottom of the storage tank through the pump and then forces the gasoline back into the tank through openings near the roof. In this way a complete mixture is obtained. The injector feeds into the gasoline line.

As soon as the dye solution was drawn into the gasoline line, the blenders prepared to inject the Ethyl fluid into the tank.

Each blender donned long rubber gloves, and rolled a drum of the fluid into position. Each one put on a gas mask, and then removed the two caps. An accompanying photograph shows them in the act of taking out the second of the caps in the side of the drum.

The pipe from the inductor was then inserted into the drum, and one



Foster Wheeler Atmospheric and Vacuum Refining Units

The illustration shows the atmospheric fractionating tower and tube still of a Foster Wheeler installation consisting of an atmospheric and vacuum distillation plant.

The atmospheric unit has the capacity to handle 4,000 barrels of crude per day. It is designed for the continuous removal to specification of gasoline, heavy naptha, kerosene, gas oil, wax distillate, heavy wax distillate and cylinder stock residuum.

The vacuum unit, which is behind the atmospheric tower, will handle 1200 barrels per day of reduced crude from a shell still battery. It will recover to specification five products, running to heavy flux bottoms.

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The work's almost over. The injector pipe has been removed from the drum and placed in a bucket of kerosene at the left. The caps have been screwed back in place on the drum and one workman, still wearing his mask and gloves is washing the drum with kerosene. The other blender, to the windward of the drum has just removed his mask. The tank of gasoline blended is seen in the background.—N.P.N. staff photo

of the men picked up a rubber hose, turned a valve, and proceeded to wash off the tools he had used in removing the caps. He did not wash the caps with water—he used kerosene. He then filled a bucket with kerosene, and finally washed the concrete floor all around the drum.

The pump meanwhile was slowly drawing the Ethyl fluid from the drum into the gasoline line and thence into the tank. The blenders had a 15 or 20-minute wait, so they stepped to the windward side of the drum and removed their gas masks.

If either of the workmen, while removing the caps from the drum, had gotten a single drop of the fluid on his white coveralls he would have had to go immediately into the dressing room, strip and take a thorough shower with hot water and plenty of soap. That is one of the rules of the Ethyl corporation.

The gloves and shoes are washed with kerosene before they are removed. This blender is washing his gloves. He soon will be under a shower of hot water and will be using plenty of soap.—N.P.N. staff photo

When the drum was almost empty the blenders again put their gas masks in place, and while one manipulated a valve the other allowed a small quantity of gasoline to flow into the drum in order to wash the fluid from the sides. When this gasoline had been drawn from the drum, the injector pipe was lifted out and placed in the bucket of kerosene. The caps were screwed back in place, and the drum completely washed on the outside with kerosene. It was then rolled out of the way, preparatory to being shipped back to the Ethyl corporation.

The "one drum blend" was over. All that remained to be done was for the men to wash their gloves and shoes in kerosene, strip off their coveralls and wash them in kerosene, then take a good shower bath. The coveralls were bundled up and sent to the laundry, another of the regulations. A suit cannot be used twice for blending before it is laundered.

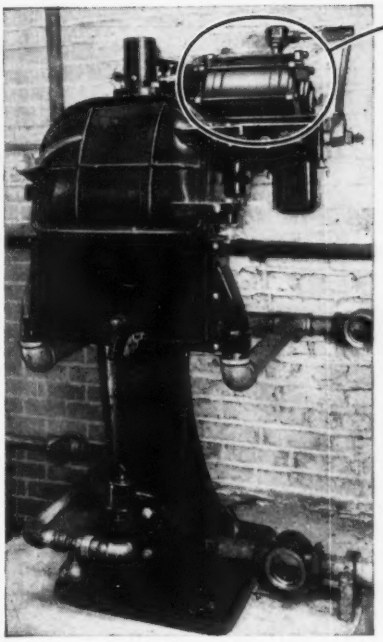
The pump was speeded up and was kept busy for the next four hours circulating the gasoline. That was done in order to mix thoroughly the gasoline and Ethyl fluid. In that period of time the gasoline was circulated through the tank one and a half times.

The Producers & Refiners Corp. could not ship any of the gasoline blended, even if they had had rush orders. A sample of the blended gasoline had to be sent first to the Omaha laboratory and tested. If found to be up to specifications in every way, laboratory officials released the gasoline for shipment by sending a wire stating that the blending had been done satisfactorily.

Before the two men who did the actual blending could be assigned by the refinery superintendent to that work, they had to undergo medical examination by Ethyl corporation physicians sent to West Tulsa for that express purpose. No other workmen in the refinery are permitted to do the blending. These two men are examined by an Ethyl corporation examiner every four to six months. While the chief chemist may witness the operation from a distance, he is not allowed to do any of the work, because he handles litharge in laboratory, and should he develop lead poisoning there would be no way of telling whether he got it from the laboratory or from the Ethyl fluid.

Why all these precautions? Because tetra ethyl lead is poisonous. It can cause loss of life if it gets into the body through pores, cuts, or is breathed into the lungs. There probably would be very little danger if a man worked at the blending just one time without all the precautions. But the Ethyl corporation is taking no chances. And according to our information there has been no case of lead poisoning among any blenders

When This Motor Goes In, Your Plant *Factor-of-Safety* Goes Up!



Centrifuge of well-known make equipped with Louis Allis Type E or "Explosion-Proof" motor. Type E motors are being used in refinery service as direct drives for centrifuges, pumps, fans, etc., and do not require a fire wall.

Here is the motor that fits into your safety program—the Louis Allis "Explosion-Proof", or Type E, motor—tested and approved by Underwriters' Laboratories for operation wherever petroleum products are made, used, or handled.

You can install Type E motors anywhere in the refinery or natural gasoline plant with the assurance that you are increasing your plant factor of safety—because these motors are specially built to eliminate all conceivable fire hazards of electric motors operating in explosive atmospheres—a fact clearly shown by the exhaustive and severe explosion tests made by Underwriters' Laboratories before granting their approval.

Underwriters' tests, and the special construction features of Louis Allis "Explosion-Proof" motors, are fully described in a new 12-page bulletin which is just off the press. A copy will be sent, without obligation, upon receipt of your request.

Write for Bulletin 508

WARNING to REFINERS

Do not confuse the Louis Allis "EXPLOSION-PROOF" motor with so-called "vapor-proof" motors. Real "EXPLOSION-PROOF" motors must be specially constructed and must pass severe explosion tests to be approved by Underwriters' Laboratories for use in explosive atmospheres.

LOUIS ALLIS "EXPLOSION-PROOF" *Electric* MOTORS

THE LOUIS ALLIS COMPANY
MILWAUKEE, WIS.
Motor Specialists for 28 Years — Offices in Principal Cities

If Lube Oils Need Clarification Before Shipment . . .

ARE you faced with a cancellation of orders because a little foreign matter somehow crept into the lube oils?

At a small cost you can clean these oils just before shipment. You can install the Sweetland Pressure Filter with special filtering medium.

This is proven practice. Full information will be of interest.

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CHICAGO, 565 Washington Blvd. LONDON, W. C. 1, 150 Southampton Row
PARIS, 63 Ave. des Champs Elysees.
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Have a cool supply of clean-pure sparkling water... ready to drink at all times. No matter where you are the GOTT Water Can is health insurance.

Your supply store has them.

Gotkool

GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.

GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.

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since these rules and regulations were drafted and the refinery blenders forced to adhere to them to the letter.

After the Ethyl fluid has been mixed into the gasoline there is virtually no danger. There is not enough tetra ethyl lead even in the maximum of 3 c. c. per gallon to cause injury. The motoring public, therefore, can rest assured that after the fluid is in the gasoline, they are in no danger whatever when they operate their automobiles with Ethyl gasoline.

Estonia to Build Oil Shale Plant

CLEVELAND, Dec. 19.—It is reported from Tallinn that the Estonian government has approved the construction of a large refinery for the production of benzine from oil shale.

The administration of the State-owned oil shale mines has been authorized to start construction of the plant early next spring. The contract for the erection of the plant, which is estimated to cost approximately 360,000 Estonian crowns, ($96,000) will, in all probability, be awarded to the Berlin firm, Heckmann, with which negotiations are being conducted.

The daily production of benzine by this plant will be 75 tons, which will cover approximately 60 per cent of the total benzine requirements of the country. The administration of the oil shale mines hopes to be able to sell the benzine produced by the new plant at the considerably reduced price of 0.24 Estonian crowns per liter (24.2 cents per gal.), instead of the present price of 0.34 Estonian crowns per liter, (34.5 cents per gal.).

Further reports state that the Estlandische Steinol A. G., at Tallinn, backed by the British firm South African Goldfields Co., and which has been shut down recently, has resumed the production of gasoline from oil shale.

The Swedish oil shale distilling plant in Estonia has also been shut down for sometime and it is not known whether that plant will again be opened for operation. Since the shut-down of these plants importers of motor fuel have taken advantage of the opportunity to advance prices considerably. The Estonian government, through its own plant production, hopes to stabilize and regulate the price of motor fuel.

CHICAGO.—A welding rod developed for welding the 18-8 chrome nickel and similar alloys steels used to resist corrosion and elevated temperatures is described in a bulletin recently issued by the Fusion Welding Corp., subsidiary of the Chicago Steel & Wire Co. The new welding rod is known as Type-S.

Mechanical Devices Speed Work In Handling Barreled Goods

MECHANICAL devices for the handling of barreled and cased oils at refineries and warehouses have proved to be great labor savers and therefore real economies to the oil companies that have a considerable volume of package goods to handle.

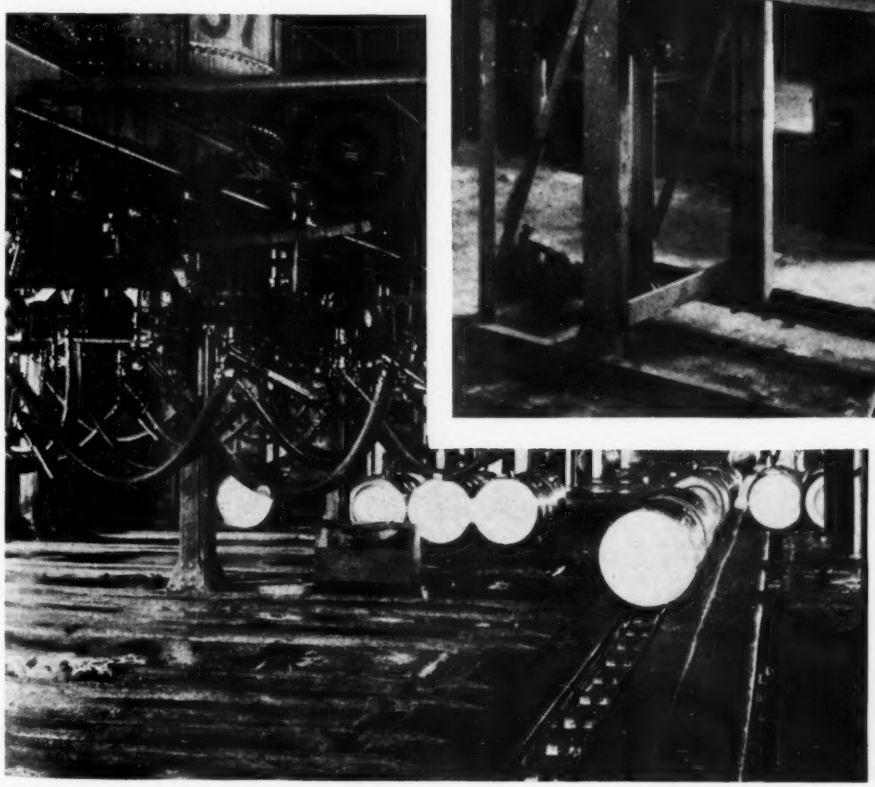
There are two-wheeled hand trucks which have been in use for years as a means of moving barrels. Some of these have hoops which slip over the barrel or drum to make tilting easier and to hold the container securely to the truck.

Tilt stands by which heavy drums may be maneuvered by one man and which facilitate draining are being used by many oil companies at both bulk and service stations. At the latter these stands increase the possibility of display of the oils outside the buildings. Many of them have casters which permit easy pushing around in the drums.

Electric portable elevators also are being used to hoist drums of oil for storage on metal racks. These elevators also are used for unloading or loading cars.

In plants where the volume of handling does not warrant an investment in an electric elevator, there are hand

Above—Small portable elevator used by Great Western Oil Co., Cleveland, to barrel oil direct from a blending kettle



At left—Chain conveyor and automatic barrel fillers in barreling house of Vacuum Oil Co. at Paulsboro, N. J.

—Photo by Link-Belt Co.

operated elevators which save a great deal of labor and may replace the services of one or two roustabouts. While hand operator equipment is not so speedy as the electrical jobs, they, nevertheless, greatly reduce the time that is required to load and unload storage racks.

Automatic barrel filling devices are now being used even in some of the smaller bulk plants. These devices stop the flow of oil as soon as a barrel or drum is filled. They permit one man to keep several fill lines operating at one time without danger of wasting oil, whereas without the automatic stop he would have to keep his eye trained pretty closely to one filling job.

In large plants where a great deal of barreled oil is shipped endless chain conveyors are being used to transport the barreled oil either to the warehouse or truck or car loading platforms. These conveyors are usually geared to travel about 75 feet a minute which means that barrels can be kept moving at a fast rate.

Above—Hand operated elevator used in racking barreled oils in the warehouse of The Texas Co. at Detroit
—Photo by Economy Engineering Co.

Above—Electrically operated elevator used in placing barreled wax on steel racks
—Photo by Barrett-Cravens Co.

Below—Drums on tilt racks in a warehouse. These racks permit one man to handle a barrel or drum of oil that weighs 450 to 500 pounds
—Photo by Economy Engineering Co.

"Why Do I Remain an Independent?" Some Old Timers Answer

CLEVELAND

"IF THOMAS EDISON had been 'controlled' and told to do this and try that, instead of following his own independent way, there is an almost certainty that the Golden Jubilee anniversary of the discovery of the incandescent lamp would be celebrated some years hence.

"Leadership must remain with the independent mind in any industry, largely for the reason that it is not hampered by company tradition, or by the jealousies of the higher-ups who are afraid to have their own mediocrity uncovered."

Thus, succinctly, does W. O. Hudson, president and general manager of the Marine Oil Co., Ltd., New Orleans, one of the leading independent marketers in the country, give his main reason why the independent marketer is a necessary factor in the oil industry and will remain such, despite mergers and consolidations.

Mr. Hudson, together with several of the best known independent marketers of the country, were asked by NATIONAL PETROLEUM NEWS if they would tell its readers why they continued to remain in business for themselves, in spite of advantageous offers to sell out to the nationally marketing oil companies and what opportunities for the independent the oil marketing industry holds today.

"Whatever the problems that confront the oil industry, and there are problems, the record of the industry shows that it will be the independent oil men who will find the way to break through to new and better conditions," Mr. Hudson continued. "There must be a way through and the independent oil man will be the one to find it and to reap the profit from his success."

Mr. Hudson was not the only oil man appealed to who saw the advantage of an independent mind, free to work out its own ideas and methods, not only to the general progress of the marketing industry, but also in the conduct of an individual business.

The independent company can quickly diversify its business to the needs of the particular territory in which it is doing business, said C. A. Slimp, who with his father, A. B. Slimp, run the Slimp Oil Co., with headquarters at San Antonio, Texas, whereas the larger organizations are more unwieldy in bringing about changes in their methods to meet new conditions and also it is more difficult for them to change their marketing methods and policies in any community to take advantage of peculiar local conditions.

"Our business has been built up by diversifying in our methods of distribution to take advantage of conditions peculiar to our territory," said Mr. Slimp. "We have established a business that sells in tank cars, by tank truck, and at retail, selling to wholesalers, retailers and consumers. We have engaged in the sale of heating and furnace oils to buildings and homes by truck distribution, and have built up a trade among farmers and commercial accounts. Generally speaking, we have tried to build a business not along one line, but we have spread it out in such a manner that at every season of the year a product and customer for it is available to keep our facilities busy."

W. O. Hudson, president and active head of the Marine Oil Co., Ltd., New Orleans, one of the staunchest of the independent oil marketers of the country

Closely akin to the advantage of absolute freedom to one man to direct and change the policies of his company as his judgment and experience may dictate, without having to go to a board of directors or some distant executive, several responding to NATIONAL PETROLEUM NEWS' inquiry placed the personal nature of the independent's business. The independent oil company is a home institution in its territory, they pointed out. It is known to a great many of the business men there, not as the So and So Oil Company, but as Jim Brown's company. They know the owner and proprietor and they do business with his company on the basis of a personal relationship the agent for the big companies can never get.

In this connection these men pointed out, as an example of the extent to which the personal factor enters into the independent marketer's business, that the national companies who were buying out the local independent companies were finding that purchasing the company did not insure taking all its gallonage over to the new owner.

"Selling out the business by an independent in this section of the country would not divert the entire business to the purchaser," said Mr. Hudson along this line. "Business carries on in the Sunny South strictly upon friendship and one's personality. Without a doubt, there would be a loss to the purchaser of at least 50 per cent of the gallonage and a further loss through the certainty of losing the identity of the brands as founded and maintained by the independent."

"I am confident that the small jobber who has a business contact with his friends and neighbors will always be able to get his share of the business provided he carries on on a sound and dignified basis," said J. M. Cushman, president of the International Oil Co., Des Moines, Ia.

"We believe the independent will continue to stay in business if he has the 'stickability,'" said Mr. Slimp on this point. "There will always be a place for him and he can build a business on goodwill and personality that gives him an advantage not easily undone by the larger interests with their farflung publicity and tremendous marketing facilities."

Another advantage that the independent has over the big integrated company, operated through agents and various line and chief executives, is that, if well managed, it can carry on its business at a less operating cost than the big company. This point seems to have been borne out

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One Hand Portable
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Flushes Gears
EASIER
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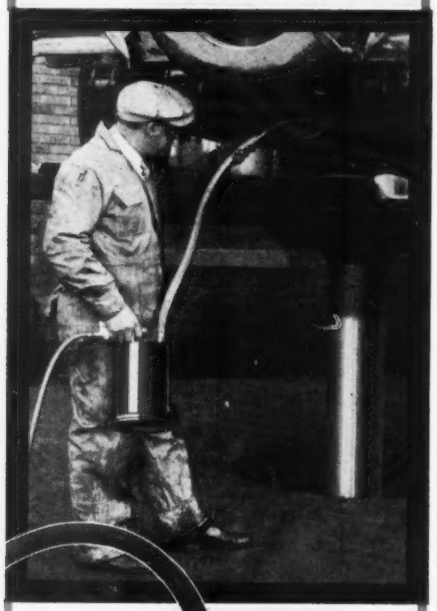

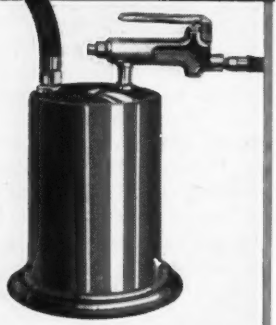

Attaches Directly to Any Air-Line

The Bennett 100% "AIR-WAY" Flusher reduces rear axle and transmission grease to a liquid and removes it more thoroughly and more rapidly than has ever before been done—yet it sells at only a fraction of the price of all previous Flushing-Type cleaners.

It has no moving parts—simply attaches to any air line and alternately injects and sucks out cleansing oil or cutting oil until gears and housing are clean. Its powerful injection stream and suction pull are amazing—the finest, fastest, handiest and most satisfactory flusher in existence—regardless of price.

BENNETT PUMPS CORP., Muskegon, Mich.
SERVICE STATION EQUIPMENT CO., Ltd., Toronto and Winnipeg
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Write for "AIR-WAY" Bulletin

in the experience of many independent marketing organizations.

The larger the organization, it was said, the less responsibility the individual feels for the dollars of the company's money he is spending. Not that there is wilful carelessness, but there is a feeling on the part of executive and employe alike that a few cents here and there added to operating costs make little difference to a company the size of the one they are working for, and the result is a material increase in the cost of doing business.

The independent marketer, it was pointed out, is spending his own money when he makes the decisions involving considerable expenditures. He gives all operations of his business his personal supervision. He knows where the small leaks are and corrects them. His employes know him personally. Many of them call him by his first name. They know it is his money they are spending, or wasting through careless operating methods, and not that of some intangible corporation whose surplus they have read amounts to many millions.

On another point, it was plain, from the nature of the replies from heads of independent oil companies that these men had taken their greatest happiness in life from running their own businesses. The question was in their minds as to what they would do if they did sell out their companies. To many the idea of working as a cog in some larger organization did not appeal and the thought of retiring from active business life was equally repugnant.

"I have had many chances to sell out to larger companies and I have also had chances to consolidate with smaller companies," said Mr. Cushman. "My reasons for not doing so are these: In the first place, if I stay in the business, I can have more satisfaction in doing business myself than I can in working for some larger company.

"In the next place, I do not know of any place where one can invest the same amount of money and do better with it than in the oil business.

"I am happier than as if I sold out, regardless of the money part of the transaction."

"There have been many nights when I would have enjoyed mightily putting on my hat and going home with nothing on my mind but my hat, with the knowledge that someone else had to do the worrying," said C. L. Maguire, head of the Northland Oil Co. "On the other hand, there have been many nights when, by virtue of some accomplishment, it has been quite the other way around. On the whole, I am rather inclined to think I had rather do it this way."

This comment came from H. F. Stoke, who runs the Stoke Oil Co., at Roanoke, Va., in a territory where he frankly said the outlook for the independent was none too bright because of the concentrating of the gallonage in the hands of the major companies.

"The man deciding to sell out as an independent has three alternatives as to his future," said Mr. Stoke. "Either he must become an employe, enter some other line of endeavor or retire.

"One who has enjoyed the satisfaction of the full play of his resources of initiative and originality shrinks from becoming an employe in a subordinate position. He may become a useful cog in an organization, but, denied the exercise of his full powers, the best of him dies. In addition to this he is accustomed to expect the full economic return of his efforts and is reluctant to waive possible greater gains for a fixed salary.

"Entering some other line, with which he may be unfamiliar, entails hazards the cautious man hesitates to assume.

"Retirement is only for those who have accumulated a competence, and to whom the future no longer beckons."

"I can see no more reason for selling an independent business today than in the past," said Fred C. Cramer, who has been running the Denver Powerine Co. for 17 years, with headquarters at Denver. "Such a business, conducted on sound principles, will not show a loss over a year's time. We have taken great satisfaction and pleasure from building our business on a sound basis, first by being extremely particular in the merchandise we market and in maintaining a fair price for all goods sold."

"I think the opportunities are greater today for any organization to make money than ever before," said M. B. Whiting, president of the Whiting Oil Co., Clifton Forge, Va. "However, it takes a business organization to realize this particular point. At one time anybody could make money in the oil business, but it takes an executive today who is capable of buying and selling, acquiring capital, and last but not least who weighs his operating expense most carefully."

"I get a great deal of pleasure from establishing my own sales policies," said L. H. Martin, Greensboro, N. C., who has spent 10 years time and much effort in establishing his business. "While I have not acquired a sufficient fortune to justify retirement I would not be interested in giving up the fight even if I were independently wealthy.

"I believe the independent jobber has the best opportunity today that he has ever had, but to make the most of his opportunities he needs to watch carefully his credits and overhead, improve his service, and avoid sacrificing profits for volume."

Peter Jensen, of Hansen & Jensen Oil Co., Escanaba, Mich., believes that overproduction and over taxation are

responsible for many small company "sell outs."

"Our firm has done business in this county since April 1, 1893. I am a firm believer that he who wants to perpetuate his good name to his posterity must do so by good deeds and acts of charity. Therefore, if our name is worth anything we want to turn it over to our children.

"I can see no good reason why independent jobbers should worry so long as they do an honest business and manage it as a business should be managed. One thing is sure, their overhead is less than that of the big companies and their social standing in the community is something in their favor," said Mr. Jensen.

"We believe that the oil business is as good as any other business to be in," said T. Wilbur Thornhill, president of the Charleston Oil Co., Charleston, S. C.

"A man can make some money with the oil business today, if he honestly markets good products, keeping out of the 'bootlegging' and price cutting class. There is probably more to keep a man alive and awake in the oil business today than there ever has been. I believe that as soon as the oil operators, as a whole, learn that the business that they are in is their business, and is to be controlled by them and not by the buyer, conditions will be a whole lot better, provided we do not go too far and overlook the rights of the buyer.

"I believe, too, that we can create a fairer sense of honesty and responsibility between competitors in the oil business, which will make for better marketing conditions and yet not jeopardize the purchasing interest of the general public," said Mr. Thornhill.

Outsider Checks Station In Case of Shortage

FORT WAYNE, Ind.—Whenever shortages appear at stations of the O'Day Oil Co. here a checker investigates the station before action is taken with the attendants. The checker may stay at the station for 30 days if necessary.

All sales are noted by the checker and he handles all cash. If the checker finds the cash and deliveries of goods balance, and all pumps and equipment are in working order, the company investigates the attendants.

In one case a station was short 40 cents for a number of days. The checker also came out 40 cents behind. An investigation revealed a small hole in the over-flow line of a pump.

Shortages are taken from the attendant's pay. When employed the attendant signs an agreement that in cases of shortages the company's books are taken as final authority.

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KEROSENE TANK UNIT

A 65 gallon unit equipped with quantity stops for 1 qt., 2 qts. and 1 gallon. Can be supplied in 60 and 110 gallon round and 65 and 120 gallon square tanks, with quantity stops.

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You will do well to keep an eye on Universal—to watch its rapid development of new and better means of handling oil, grease and kerosene.

For here is a young company—with all the virility and enthusiasm of youth—manned by veterans of the industry: by men with a history of real achievement.

The inventive genius and practical knowledge of those men is responsible for many of the present improvements in the equipment you use.

Now, through the strong Universal organization, they bring a wealth of new, vital ideas that will mean greater convenience, utility and profit for you.

Watch for the announcement of these new developments (the first will appear in these pages soon). Universal's news will be of real interest to you.

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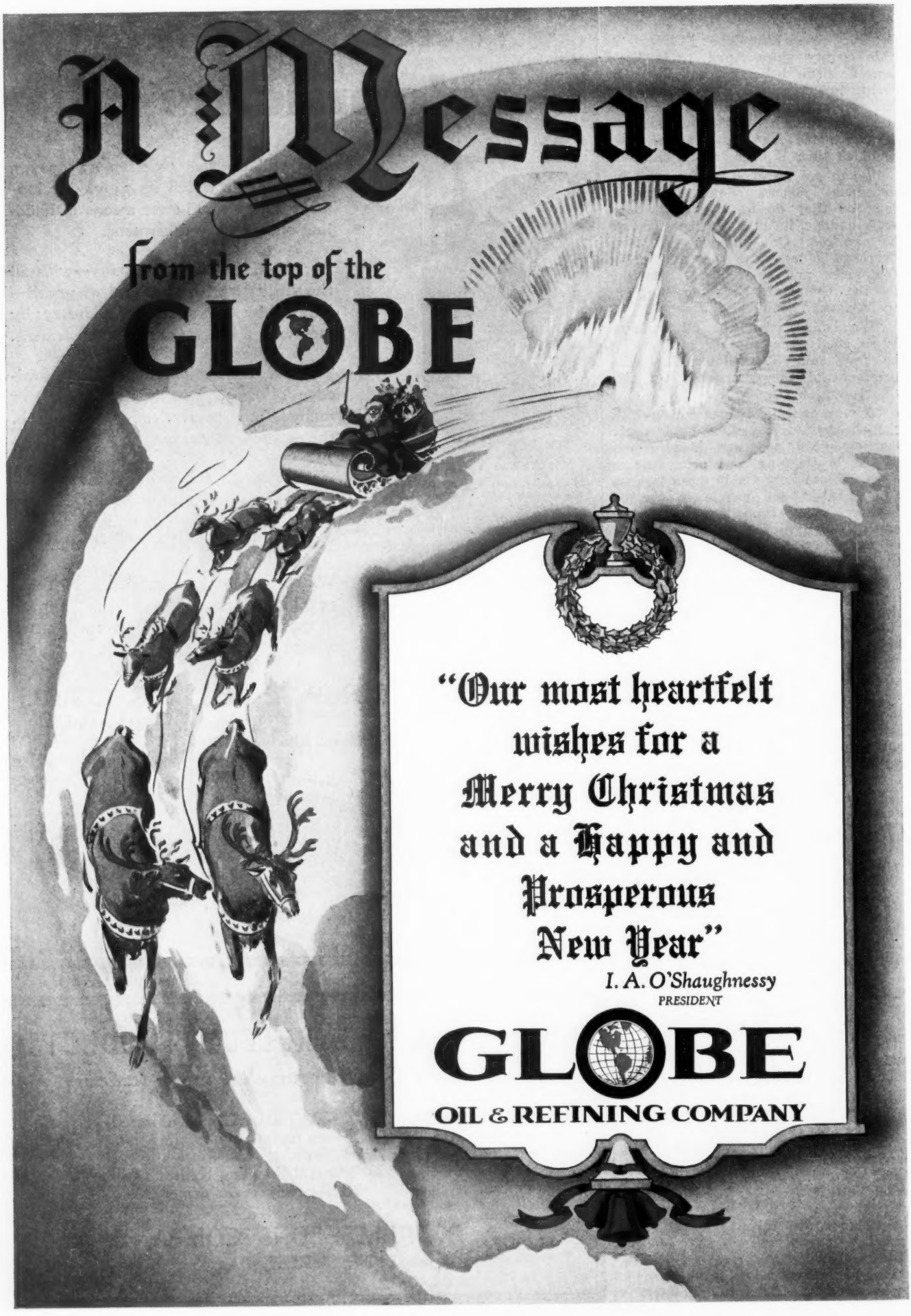

A Message
from the top of the
GLOBE
"Our most heartfelt wishes for a Merry Christmas and a Happy and Prosperous New Year"
I. A. O'Shaughnessy
PRESIDENT
GLOBE
OIL & REFINING COMPANY

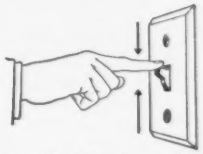
New Stations Building

Note: Material used in this column is principally taken from the newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Atlantic, Ia.—G. C. Hoegh, filling station.
Sioux City, Ia.—Cities Service Oil Co., filling station.
Waupaca, Wis.—Shell Petroleum Corp., filling station.
Audubon, Ia.—Cities Service Oil Co., filling station.
Pittsburgh, Pa.—Standard Oil Co., filling station.
Bedford, Pa.—Atlantic Refining Co., service station.
York, Pa.—Cash & Carry Gasoline Corp., service station.
Troy, N. Y.—Standard Oil Co., service station.
Huntington, W. Va.—Standard Oil Co., filling station.
Fremont, Neb.—The Texas Co., filling station.
Houston, Tex.—Cities Service Oil Co., filling station.
Le Mars, Ia.—Mid-Continent Petroleum Corp., filling station.
Washington C. H., O.—Refiners Oil Co., filling station.
Norwalk, O.—Refiners Oil Co., bulk station.
Clarion, Ia.—Shell Petroleum Corp., filling station.
Klossner, Minn.—Klossner Cooperative Oil Co., bulk station.
Henryetta, Okla.—Cities Service Oil Co., filling station.
Columbia, Mo.—Independent Oil & Gas Co., filling station.
Paris, Mo.—Mr. Hebel, filling station.
Pine Bluff, Ark.—Specification Motor Oil Co., service station.
Bentonville, Ark.—W. M. Wright, filling station.
Covington, Tenn.—Tennessee Oil Co., filling station.
Constantine, Mich.—Shell Petroleum Corp., filling station.
Terre Haute, Ind.—Standard Oil Co., filling station.
Gastonia, N. C.—Carolina Oil Co., filling station.
Binghamton, N. Y.—Shell Petroleum Corp., filling station.
Schenectady, N. Y.—Shell Eastern Petroleum Products Co., filling station.
Devils Lake, N. D.—Cities Service Oil Co., filling station.
Shenandoah, Ia.—Independent Oil & Gas Co., filling station.
Davenport, Ia.—Sinclair Refining Co., filling station.
Waterloo, Ia.—Mid-Continent Petroleum Corp., service station.
Duluth, Minn.—H. P. McBride, filling station.
Elroy, Wis.—John J. Wegner, filling station.
St. Louis, Mo.—Cities Service Oil Co., filling station.
Paris, Ark.—Standard Oil Co., filling station.
Pueblo, Colo.—Sinclair Refining Co., service station.
Salina, Kans.—F. R. Fitzpatrick, filling station.
Columbia, Mo.—National Refining Co., filling station.
Meade, Kans.—Champlin Oil & Refining Co., filling station.
Roanoke, Va.—G. L. Fitzpatrick, filling station.
Barron, Wis.—Shell Petroleum Corp., filling station.
Aberdeen, S. D.—Firestone Tire & Rubber Co., Service station.
St. Paul, Minn.—Roy Campbell, filling station.
Minneapolis, Minn.—Albert Merstead, filling station.
St. Johnsburg, Vt.—E. P. Cray, bulk station.
Brunswick, Ga.—Standard Oil Co., filling station.
Charlotte, N. C.—The Texas Co., filling station.
Palatka, Fla.—Specification Motor Oil System of Palatka, service station.
Punxsutawney, Pa.—Atlantic Refining Co., service station.
Youngstown, O.—Pennzoil Oil Co., filling station.
Carrollton, Mo.—Phillips Petroleum Co., filling station.
Roseau, Minn.—Standard Oil Co., bulk station.
Oskaloosa, Ia.—Dr. C. G. Abbott, filling station.
Des Moines, Ia.—Independent Oil & Gas Co., filling station.

In addition to all standard cash register features the OHMER Cash Register gives you many exclusive features besides. You get a new kind of Cash Register service at a lower price than you ever thought possible



Old type push-in electric switches are being replaced by the new Toggle type. Further proof that an "up and down" motion of the hand is more natural.

This New Cash Register *operates with incredible speed*

More natural "up and down" motion of hand accounts in part for OHMER'S speed of operation.

The OHMER Cash Register gives you speed of operation. And with this speed you get greater *accuracy* as well. For it is practically impossible to make a mistake in registration with an OHMER.

Why? Because of OHMER'S Pre-Indicating System. As you swiftly set the levers the amount flashes in the Indicator. You can see that you are right before you press the operating button. You catch mistakes before registering them.

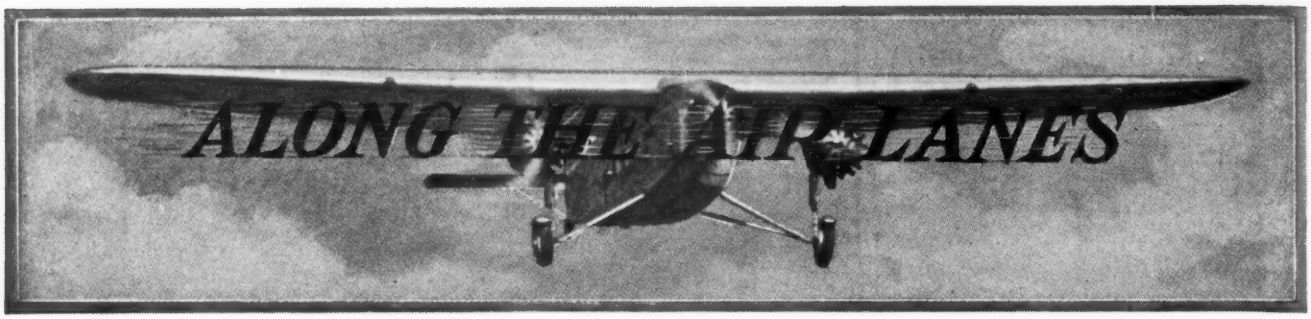
Let us give you all the facts about the OHMER Cash Register. Let us show you how it is saving money for oil men everywhere . . . how it is actually revolutionizing all previous ideas of cash register values. Stop in at our display room *today* or telephone for a representative to call.

OHMER
REG U.S. PAT OFF. AND OTHER COUNTRIES
FARE REGISTER COMPANY
Dayton, Ohio, U. S. A.

Factory Branches at

Atlanta	Cleveland	Minneapolis	San Francisco
Boston	Dayton	New York	Washington, D.C.
Chicago	Detroit	Philadelphia	Montreal
	Los Angeles	Portland, Ore.	

Sales and Service Offices in Principal Cities



AVIATION, which in the past two or three years has literally thrown into the lap of the petroleum industry a new market for gasoline and lubricating oils, now comes forward with another. That is asphalt.

"Asphalt surfacing of airports has so far been shown to be the best medium," says the November issue of "The Texaco Star," publication of The Texas Co., for the elimination of roughness, moisture and dust at the landing field, and for the safeguarding of pilot and passengers at airport.

That company's asphalt products are being widely used on many of the country's important airports, including those of St. Louis, Cleveland, Wichita, Amarillo and Colorado Springs.

If the estimate of 1,000,000 airplanes within 10 years materializes, the paving of airports looms as an important factor in aviation. The superiority of asphalt on the landing field lies in the fact that its resiliency offers the minimum of resistance to the shock of a landing plane, presents a smooth surface for taking off, and it is adaptable to changes in temperature. No soft, soggy turf in wet weather nor dust in hot, dry seasons, need endanger the pilot, passengers nor motor if the field is laid with asphalt.

A FORMER oil company engineer who turned commercial air pilot won the first of the monthly prizes of $100 offered by the Chicago Daily News to the commercial pilot credited with the most meritorious flying for the month. The pilot is Chester R. Bailes, of Wichita Falls, Tex.

Bailes received the award for his aid when two oil field workers were injured. At the time Bailes was chief pilot at San Angelo, Texas, of the San Angelo-Wichita Falls line of the Braniff division of the Universal Aviation Corp. Word was received that two employes of the Phillips Petroleum Co. at Fort Stockton, 150 miles away, had been seriously injured.

Bailes was unfamiliar with the country around Fort Stockton and the town had no landing field, but he took off from San Angelo just after sundown with a surgeon, nurse and the wife of one of the injured men, made a safe landing in a field near the oil properties, and with the aid of townsfolk and drillers, improvised a stretcher for the two injured men in his Fairchild plane. He then flew them back to San Angelo where they were landed before dawn and given immediate medical and surgical attention in a hospital. Bailes' work in getting his ship in and out of a small field at Fort Stockton, which is 3000 feet above sea level, and his humanitarian act, was held by the awards committee as worthy of the prize.

Bailes is a graduate of the University of Texas. He was a civil engineer with the Continental Oil Co. for three years but got his hands on an antique OX5 Standard at Dallas back in 1924, and decided to become a flier. Since that time he has flown in nearly every state in the Union as well as in the tropics, and has the record of never having damaged a plane. At present Bailes is chief pilot on the Oklahoma City-Wichita Falls division.

This Stearman plane of the Richfield Oil Co. keeps Dudley M. Steele, aviation manager, up in the air most of the time. He is the one in flying togs watching a field attendant fueling his gasoline tank

Chester R. Bailes

Merchandising and Jobbing Ideas Marketers Are Practicing

By E. L. Barringer
N. P. N. STAFF WRITER

INCIDENTALLY the word is going around that the tire companies are calling a halt in building such beautiful stations. There seems to be a desire to get the stations a trifle dirty to indicate a spirit of hustling from waiting on the trade.

A favorite trick of washing machine salesmen is to demonstrate by doing a washing when they are dressed in good clothes. Cleanliness and neatness is desired about a station, but some oil men believe a touch of grime has a psychological effect on the customer that the place is busy.

Another slant on these stations is that the tire companies may use the same financial outlay to build two moderately attractive stations in a city rather than one ornate place.

* * *

Bulk Storage Station Idea Is Still Alive

The bulk storage service station idea of merchandising gasoline from "tank car to consumer" is not dead entirely. A dealer in an eastern state is figuring on these stations as a means of reducing costs in case he decides to expand his business.

Several years back these stations sprang up, mainly in Ohio, Michigan, Indiana, and New York. Spreads between tank car and service station prices were wide in those days and much price cutting cropped out. The "price cutter" used the bulk service station method of getting gasoline through his outlets. Naturally the idea of a bulk service station fell into bad repute in our industry.

This dealer can pick up some good sites, not near established stations, and have a railroad in the back yard and a main highway at the front door. He is figuring on his installation and operation costs as against his building these stations and buying off some refiner's tank wagon.

* * *

Modern Motorist Wants Little Delay in Service

The quickened tempo of modern living has struck at the service station customer's patience as witnessed by the story told by Charles O. Hubbs, oldest Independent jobber in Mansfield, O.

Fifteen years ago he started in business with a curb pump in front of his auto paint shop. On a Decoration day he went to lunch, hanging out the sign "back in half an hour."

When he returned there were 26 automobiles lined up for "gas." Frequently there would be 16 or 17 cars lined up for service when he opened his first drive-in station eight years ago. Today he considers it a bit of luck if he can hold three cars in his station without the last arrival pulling out to a station not so crowded.

* * *

Price War Helps End Commercial Discounts

At the recent meeting of the Pennsylvania Oil Men's Association in Pittsburgh a discussion on the code of ethics brought a suggestion from some jobbers that commercial discounts should be eliminated at service stations.

Wooster, O., has gone a long ways in this direction. Commercial discounts were being eliminated when a recent price war flare-up helped the cause. When service station prices returned to normal the oil companies jumped at the opportunity to cut out more commercial discounts. At present the discounts are limited mainly to utility companies and busses - - - companies that operate over wide territories.

* * *

Millionaire Proves Good Station Salesman

A millionaire is working for $90 a month at a service station of George Ingram who runs the Red Raven Oil Co. at Canton, O. He is between 50 and 60 years of age, and works at the station to put in his time.

The fortune was built on real estate from investments his father began. Some valuable property in the retail business section is owned by the attendant. His home is in that section of town which is shown off to the country cousins.

He refuses to buy an automobile, saying he does not know how to drive and is too old to learn.

Mr. Ingram shifts him around if some station needs a little mature supervision. He is a good workman, often working more hours than his regular shift.

The Red Raven Oil Co. likes to have a young and an old man work together on a shift. The older man is to lend some dignity while the young chap furnishes the pep and energy. The older man also makes a good balance wheel on the shift.

* * *

Swashbuckling Found to Pay Small Profits

In getting jobbers to recite the history of their company many will drop the remark that "when I opened up so-and-so came over and told me that he would run me out of business in six weeks." There is evidence that some of these youngsters survived the six months running out period and have grown to respectable size.

Let us hope that those crass days are gone forever. A jobber, or the representative for a big company, might well spend his energy on building his profits rather than waving the big stick over a competitor.

* * *

Good Attendant Makes Night Station Possible

That the right man will make an all-night station profitable where the wrong one will not, is the opinion of C. J. Marchino, general manager of the Lily White Oil Co., Terre Haute, Ind.

Last June the company decided to keep one station open all night. After a few weeks the idea was abandoned as sales did not justify the extra outlay.

Late in October the idea was tried once more, with one Chester Golden as attendant. At the end of three weeks, profits from sales were equal to the additional overhead, and day time gallonage had picked up also.

Mr. Golden had sold himself to some big accounts, and in turn got the business. A taxicab company patronizes the station, and so do some milk distributing companies on account of the convenience of the service in the small hours of the night.

"Good attendants are harder to find than good bank presidents," said Mr. Marchino.

* * *

Can You Beat This?

Speaking of delivery records of truck drivers, Geo. W. Deer & Son, at Crawfordsville, Ind., has a driver who bucketed 1432 gallons of kerosene and gasoline to the farm trade in one day. He is Clarence Snyder, agent at Hillsboro, Ind.

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations Week Ended December 20 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Dec. 20
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	92,000	160,200	86,600	81,500	54,900	475,200
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs	54,275 — 13.3	116,021 + 4.2	68,143 + 10.2	31,803 + 8.2	56,252 — 5.8	326,499 — 0.5
Da. Av. Other Oils	7,533 — 11.4	7,941 +183.8	2,013 — 24.4	1,715 — 27.8	1,912 — 37.9	21,114 + 8.7
GASOLINE—Gallons						
Stocks, Dec. 13	18,751,000	51,584,000	17,655,000	11,916,000	8,852,000	108,758,000
Prod. 12-13 to 12-20	10,098,000 — 4.5	18,611,000 + 8.6	8,896,000 + 0.7	2,851,000 + 0.9	5,647,000 — 1.1	46,103,000 + 2.3
Ship. 12-13 to 12-20	8,172,000 — 16.1	13,588,000 — 11.3	7,556,000 — 6.5	3,029,000 — 2.0	4,063,000 — 30.4	36,408,000 —13.5
Stocks, Dec. 20	20,677,000 + 10.3	56,607,000 + 9.7	18,995,000 + 7.6	11,738,000 — 1.5	10,436,000 + 17.9	118,453,000 + 8.9
Ratio Sales to Prod.	80.9%	73.0%	84.9%	105.2%	71.9%	79.0%
KEROSENE—Gallons						
Stocks, Dec. 13	15,139,000	7,918,000	3,052,000	38,000	1,277,000	27,424,000
Prod. 12-13 to 12-20	1,306,000 — 33.8	2,547,000 + 4.0	1,739,000 — 0.1	.....	792,000 +160.5	6,384,000 — 1.3
Ship. 12-13 to 12-20	1,592,000 + 10.0	3,219,000 + 14.3	2,126,000 +157.7	34,000 + 13.3	331,000 — 29.1	7,302,000 + 31.4
Stocks, Dec. 20	14,853,000 — 1.9	7,246,000 — 8.5	2,665,000 — 12.7	4,000 — 5.3	1,738,000 + 36.1	26,506,000 — 3.3
Ratio Sales to Prod.	121.9%	126.4%	122.3%	.....	41.8%	114.4%
STOVE DISTILLATE—Gallons						
Stocks, Dec. 13	2,819,000	4,952,000	1,374,000	117,000	256,000	9,518,000
Prod. 12-13 to 12-20	1,026,000 + 34.5	1,988,000 + 78.5	212,000 — 43.1	75,000 + 47.1	126,000 —320.0	3,427,000 + 31.8
Ship. 12-13 to 12-20	521,000 — 3.3	1,358,000 + 33.8	520,000 + 8.8	91,000 — 24.8	297,000 + 59.7	2,787,000 + 19.2
Stocks, Dec. 20	3,324,000 + 17.9	5,582,000 + 12.7	1,066,000 — 22.4	101,000 — 13.7	85,000 — 66.8	10,158,000 + 6.7
Ratio Sales to Prod.	50.8%	68.3%	245.3%	121.3%	235.7%	81.3%
GAS OIL—Gallons						
Stocks, Dec. 13	3,489,000	37,763,000	2,682,000	10,885,000	3,880,000	58,699,000
Prod. 12-13 to 12-20	1,587,000 — 22.5	2,769,000 + 23.4	1,229,000 + 25.5	784,000 — 12.8	2,028,000 — 3.5	8,397,000 + 1.5
Ship. 12-13 to 12-20	1,500,000 — 3.9	2,111,000 — 30.1	509,000 — 54.6	928,000 — 11.8	1,923,000 — 17.5	6,971,000 — 23.2
Stocks, Dec. 20	3,576,000 + 2.4	38,421,000 + 1.7	3,402,000 + 26.8	10,741,000 — 1.3	3,985,000 + 2.7	60,125,000 + 2.4
Ratio Sales to Prod.	94.5%	76.2%	41.4%	118.4%	94.8%	83.0%
FUEL OIL—Gallons						
Stocks, Dec. 13	11,465,000	34,070,000	67,483,000	20,197,000	22,354,000	155,569,000
Prod. 12-13 to 12-20	4,350,000 — 4.1	5,939,000 — 16.0	8,143,000 + 9.8	4,348,000 + 17.7	5,622,000 — 14.3	28,402,000 — 3.0
Ship. 12-13 to 12-20	4,676,000 — 12.9	8,051,000 — 5.1	6,860,000 — 8.0	6,538,000 — 1.1	6,907,000 + 17.2	33,032,000 — 2.3
Stocks, Dec. 20	11,139,000 — 2.9	31,958,000 — 6.2	68,766,000 + 1.9	18,007,000 — 10.8	21,069,000 — 5.7	150,939,000 — 3.0
Ratio Sales to Prod.	107.5%	135.6%	84.2%	150.4%	122.9%	116.3%

Gasoline Produced by Various Methods, Week Ended December 20

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,275,000	62.1	12,199,000	65.5	6,438,000	72.4	2,596,000	91.0	2,058,000	36.4	29,566,000	64.1
Cracked	3,092,000	30.6	5,277,000	28.4	1,541,000	17.3	93,000	3.3	2,945,000	52.2	12,948,000	28.1
Natural	731,000	7.3	1,135,000	6.1	917,000	10.3	162,000	5.7	644,000	11.4	3,589,000	7.8
Total	10,098,000		18,611,000		8,896,000		2,851,000		5,647,000		46,103,000	

+ or — columns are % change over previous week.

Crude Oil Charges Increase 2000 Barrels

Staff Special—By Telegraph

TULSA, Dec. 23

CRUDE charges for week ended Dec. 20 increased approximately 2000 barrels daily average at 93 refineries in mid-Continent reporting weekly operations to this publication. Other oils charges increased approximately the same amount.

Gasoline production increased a million gallons. This increase, registered primarily in Oklahoma, with Kansas, Louisiana, Arkansas showing slight reductions, and north and west Texas virtually unchanged.

Gasoline shipments dropped 5,600,000 gallons. West Texas was the only district to draw on stocks. Gasoline stocks accordingly were increased 10,300,000 gallons.

Kerosene stocks were reduced with production slightly lower and shipments up almost 2,000,000 gallons.

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Dec. 20. Change in stocks figures from Nov. 22.

GASOLINE

	Gallons
Production	178,325,000
Shipments	160,640,000
Net change in stocks	+17,685,000
Ratio sales to production	93.3%

KEROSENE

	Gallons
Production	24,767,000
Shipments	23,932,000
Net change in stocks	+835,000
Ratio sales to production	96.6%

STOVE DISTILLATE

	Gallons
Production	10,383,000
Shipments	10,811,000
Net change in stocks	—429,000
Ratio sales to production	104.1%

GAS OIL

	Gallons
Production	31,708,000
Shipments	33,224,000
Net change in stocks	—1,516,000
Ratio sales to production	104.8%

FUEL OIL

	Gallons
Production	113,516,000
Shipments	132,858,000
Net change in stocks	—19,342,000
Ratio sales to production	117.0%

Every district except Louisiana, Arkansas drew in stocks.

Distillate stocks were increased 500,000 gallons. Gas oil production was virtually unchanged while shipments were 2,000,000 gallons lower. Stocks increased 1,500,000 gallons. Fuel production was lower with shipments off 800,000 gallons, but stocks were reduced 4,600,000 gallons.

Late Market Changes

Price changes which came in too late to get into the seaboard market table in this issue include these waxes in the New York Export market: fully refined, 130-132 A.m.p. should be, as of Dec. 23, 4.75 to 5 cents; 135-137 A.m.p., 6 to 6.25 cents; and yellow crude scale, 3.00 cents flat.

These tanker rates were in effect Dec. 23 instead of the ones published on the complete seaboard market page:

Crude and/or Fuel Oil

California to North Atlantic ports (not E. of N. Y.).....$0.85-$0.90

Refined Oil and/or Spirits

Gulf to U. K. or Continental ports 30-31

North Atlantic to U. K. or Continental ports 27/6-28/6

California to North Atlantic ports (not E. of N. Y.).....$0.90-$0.95

Transcontinental Moves

TULSA, Dec. 21.—Transcontinental Oil Co. employes and executives in the general office here are getting new quarters as a Christmas present. The company moved its quarters over the week end from the Ritz building, Fourth St. and Boulder Ave., to the recently remodeled Thompson building, Fifth and Boston.

The company will occupy the eleventh, twelfth, thirteenth, fourteenth and half of the fifteenth floors in the new building, and will have 3000 square feet of space in the basement. The Thompson building formerly was the 10-story Mid-Continent building, but the owners recently completed remodeling and also constructed several additional floors.

Crude Stocks Still Decrease

NEW YORK, Dec. 21.—A decrease of 3,597,000 barrels in pipe line and tank farm gross domestic stocks of crude was indicated east of the Rocky Mountains in November, according to the American Petroleum Institute.

This compares with a decrease of 3,041,000 barrels in crude stocks in October.

Gulf Lubes Mark Time

HOUSTON, Dec. 21.—Gulf Coastal lubricant markets were unchanged at the end of the week preceding the holiday season. Spot business was confined to normal channels and principal shipments were under winter contract commitments. Little change in the market situation is anticipated until after the turn of the year.

Does Intelligence Count in Station Sales?

The man at the pump is a key-man of the business. Upon his intelligence, to a great extent, depends the real selling of the services of the station. Give the station man a product of such distinctive quality that in itself suggests new and different sales arguments, and he has a product with which he can build up a clientele of satisfied customers.

Penn-Empire Oils and Greases are super refined, and completely dewaxed from 100% Pure Pennsylvania Oils. Their unexcelled quality makes them easier to sell, and builds steady customers that mean steady profit. Penn-Empire Oils' EXTREMELY LOW COLD TEST is just another point that helps build winter sales.

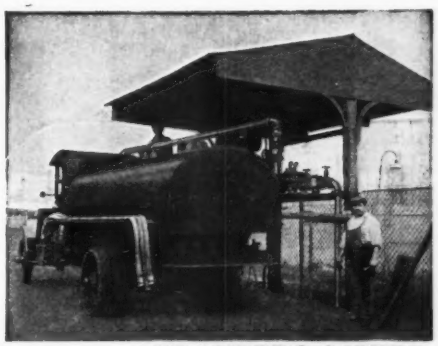
Empire Oil Works, Inc. **Oil City, Pa.**

Refineries: Reno, Pa. Tidioute, Pa.

PENN-EMPIRE

100% Pure Pennsylvania MOTOR OIL

"Speed with Safety"



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Refinery - Tank Wagon Markets

National Petroleum News

Quiet Prevails in Mid-Continent as Yuletide Holidays Draw Near

Staff Special
TULSA, Dec. 21

THE Mid-Continent refinery market was in its usual holiday lull at the end of the week Dec. 21. Domestic business generally was light and exporters were inactive.

Zero gas oils and the better grades of fuel oils were the most active commodities in the lists. The former advanced 0.125-cent a gallon and the fuel oils were scarce for spot shipment.

Gasoline sales were mostly in small lots at generally unchanged prices in most of the territory, although some lower prices were reported from north Texas and west Texas late in the week. High gravity gasolines were more active than the other grades, due probably to their scarcity.

Natural gasolines were quiet with only scattered sales on the spot market. Prices lost some ground.

Kerosenes were inactive and prices were reduced in several districts. Neutral oils and bright stocks were extremely quiet. Wax inquiries were good for January and February shipments but refiners' ideas of prices apparently were not in line with those of the buyers.

Gasolines

The cold wave which swept over the Middle West, coupled with the usual light buying at this season of the year caused gasolines to be extremely quiet. Jobbers desired to keep inventories as low as possible and probably will continue to buy sparingly until after the first of the month, and the cold weather curtailed the consumption of the goods already in jobbers' tanks.

Higher gravity gasolines appeared to be active. This probably was due not so much to the actual volume demand but to the fact that buyers had to seek the goods at a number of places. A majority of refiners who make the higher gravities apparently were too well booked with export orders to pay close attention to domestic business just at present. Some of the inquiries received from the domestic trade accordingly had to be passed around to several places before the orders could be placed.

A few refiners also desired to reduce inventories before the first of the year and the result was the establishment of a wider price range. Much of the gasoline pushed onto the market in this manner was placed in the hands of marketers. Some of the goods were full specification U. S. Motor but the majority was off slightly at some points. Virtually no future buying was reported either from jobbers or marketers.

The price range for 58-60 U. S. Motor in Oklahoma was from 6.50 to 7.25 cents, but the volume of goods moved at the lower figure was small. The bulk of goods moved from 6.75 to 7.25 cents a gallon. Off specification goods were obtainable as low as 6.25 cents a gallon.

Prices were generally unchanged in Kansas, Louisiana and Arkansas, but in north Texas marketers were active with quotations from 6.375 cents up. The few refiners who do not make high gravities were quoting from 6.50 cents up. Some of the 6.375 cent a gallon gasoline was a blend of naphtha made as a result of the high gravity gasoline cut, and natural gasoline. The prices in west Texas were generally unchanged but refiners reported competition was working a hardship on them at the present time, in view of the lower prices in some districts and their crude costs.

Natural Gasolines

Only slight price changes were made in natural gasolines but movement was light on the spot market. Contract movement was comparatively good. Some support was given the market by one or two large manufacturers who had available storage facilities. One sale of 100 cars of grade AA was reported, the goods to move from a district not represented in NATIONAL PETROLEUM NEWS and Oilgram tables, but at a price around 6.125 to 6.25 cents a gallon on an export freight rate basis, north Texas. The buyer obtained the goods at 5.96 cents a gallon but had a higher freight rate to pay. Grade B drew away from grade BB due to its scarcity. The demand was not heavy for this grade but sufficient nevertheless to take care of all the goods made.

Kerosenes

The export buying reported last week had little effect on the kerosene market. More kerosene was being made in north Texas as a result of the export gasoline orders, and with demand extremely light prices moved downward in some districts. Arkansas and Louisiana refiners were the only ones who reported an improved demand. In Oklahoma a few refiners who had been quoting up to 4.75 cents a gallon for 41-43 w.w. grade reduced prices late in the week to 4.50 cents.

Gas Oils and Distillates

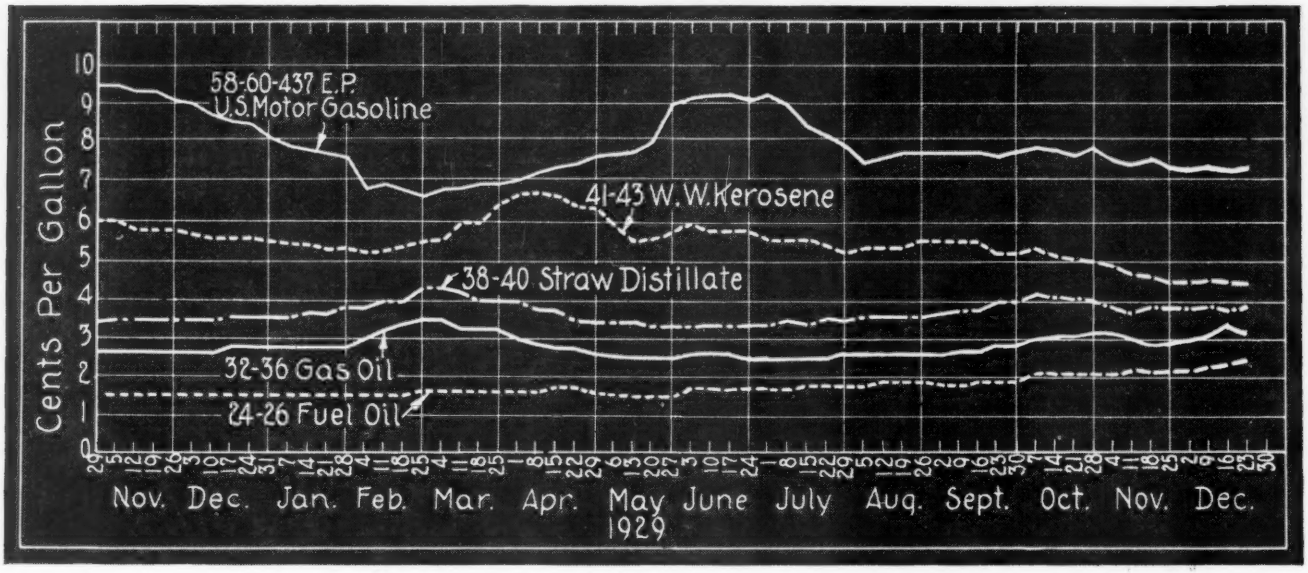
One or two gas oil suppliers withdrew from the market due to their inability to supply all the inquiries. This was true particularly of the zero and straw zero grades. The cold wave stimulated buying of these grades and prices advanced 0.125 cent a gallon.

Ordinary gas oil was more freely offered at prices ranging from 2.75 cents up. Some goods were sold in north Texas on a group 3 basis at 2.50 cents. Most of this gas oil, however, was reported to have a relatively high sulfur content.

The cold wave had some effect on distillate demand although active buying was not anticipated before next week. Prices had been unsteady prior to the change in weather but there were no indications at the end of the week that there would be any reductions at present.

Refiners reported growing tendency on the part of buyers to pay more attention to specifications than to color, and a wider price range had developed

Current Prices of Principal Mid-Continent Refined Products


58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Cents Per Gallon
Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1929

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

as a result of this. Low cold test low flash and straw color goods sold from 0.25 to 0.375 cents higher than ordinary straw or untreated goods.

Fuel Oils

A few oil sellers reported shipping instructions were slower on contract goods, while others reported spot demand just at present was light, but apparently there was still a sufficient volume being moved to prevent any accumulation of stocks. The higher gravity oils especially were scarce and in one or two instances higher quotations were announced by refiners. One buyer sought 22-26 fuel oil two or three days this week before he was able to obtain five cars on the spot market. He found quotations from $0.875 to $0.95 a barrel for the goods.

Neutral Oils, Cylinder Stocks, Wax

No changes were noted in neutral oil and cylinder stock prices. Demand was light. Inquiries for wax were mostly at 3 cents a pound for January and February shipments but refiners for the most part reported refusing those offers, in anticipation of a better demand and higher prices after the first of the year.

Gulf Coastal Water Shipments—November Compared With October
(All figures in Barrels of 42 Gallons)

	Coastwise Refined		Export Refined	
	October	November	October	November
Standard of Louisiana, Baton Rouge	714,287.00	803,477.00	676,896.00	613,117.00
The Texas Company, Port Arthur	1,304,406.00	1,241,767.00	415,227.00	383,100.00
Gulf Refining Co., Port Arthur	2,695,029.25	2,666,956.02	100,046.12	148,372.66
Magnolia Petroleum Co., Beaumont	698,639.66	877,774.95*	.....	.....
Humble Oil & Rfg. Co., Baytown	1,265,720.60	1,647,158.23	1,874,680.98	1,458,333.13
Atlantic O. Prod. Co., Atreco	37,119.52	350,182.09	.....	.....
Pure Oil Company, Smiths Bluff	461,545.62	444,121.80	.....	.....
Deepwater Oil Refineries, Houston	.....	130,000.00	45,000.00	.....
TOTALS	7,176,747.65	8,161,437.09	3,111,850.10	2,602,922.79
	Coastwise Crude		**Export Crude**	
Standard of Louisiana, Baton Rouge	753,705.00	623,218.00	53,927.00	53,913.00
The Texas Company, Port Arthur	.....	.....	.....	.....
Gulf Refining Co., Port Arthur	223,698.27	364,120.09	.....	.....
Magnolia Petroleum Co., Beaumont	927,783.34	750,560.52*	.....	.....
Humble Oil & Rfg. Co., Texas City	894,572.00	628,380.00	.....	.....
Ingleside	145,749.00	196,122.00	.....	.....
Baytown	262,369.00	439,309.00	.....	4,381.00
Neches	.....	83,850.00	.....	.....
Harbor Island	1,352,918.00	1,602,493.00	513,327.00	306,615.00
Atlantic O. Prod. Co., Atreco	1,030,687.35	1,099,306.48	.....	.....
Beaumont	158,286.34	204,019.71	.....	.....
Smiths Bluff	37,510.54	.....	.....	.....
Pure Oil Company, Smiths Bluff	458,265.21	336,437.28	.....	.....
Sun Oil Company, Sabine Pass	825,995.00	493,798.00	.....	.....
TOTALS	7,071,539.05	6,737,764.08	567,254.00	364,909.00

*Magnolia Petroleum Company makes no distinction in reports between coastwise and export shipments.

Shipments From Southern California

DECEMBER, 18.—Bulk petroleum shipments from Southern California ports for week ending December 14 were as follows:

Destination	Crude	Gasoline	Diesel	Distillate	Kerosene	Fuel	Gas-Oil
Pacific For.	69,893	168,533	86,599	.....	78,913	305,616	.....
Atlantic Dom.	.....	154,259	78,000	182,537	.....	.....	.....
Atlantic For.	.....	363,591	.....	.....	.....	.....	.....

Prices 10 Years Ago
Dec. 22, 1919

	Oklahoma	Penna.
58-60 U. S. Motor	16.00–16.25c	19.50c
80-84 Natural	22.75–23.00c	.....
Kerosene (41-43 Okla.; 47 w. w. Pa.)	9.50–9.75c	13.00c
Fuel Oil (24-26 Okla.; 38-40 Pa.)	$2.50–$2.60	10.25–10.50c
Crude (Okla. 35-35.9)	$2.75	$4.75
Chicago tank wagon	.....	21.00c

Prices A Year Ago
Dec. 24, 1928

	Oklahoma	Penna.
58-60 U. S. Motor	8.5074c	10.25–10.50c
Grade A Natural	8.375–8.625c	.....
Kerosene (Okla. 41-43; Pa., 47 w. w.)	5.50–5.75c	7.75–8.50c
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.625–$0.675	4.75–5.25c
Crude (Okla. 35-35.9)	$1.31	$3.75
Chicago tank wagon	.....	15.00c

Chicago Resale Market

Gasoline Prices Down in Dull Trading

Staff Special
CHICAGO, Dec. 21

FURNACE oils were again the most active commodities in the Chicago resale market and prices were moving upward as the week ended. The severe storm which swept the middle west this week was reported to have blocked roads and rendered motoring virtually impossible in many sections. Spot sales of gasolines were at low ebb in practically all quarters and most sellers attributed this condition to the storm and to the dullness which generally spreads over the market during the holiday season.

A downward trend was noticeable in the U. S. Motor gasoline market towards the end of the week. Whereas the bulk of sales reported up to Dec. 21 were at 6.50 to 7 cents for goods out of the Mid-Continent, on that date a number of carlot marketers reported moving Motor at 6.375 cents. The high of the price range was generally unchanged at 7 cents with a few refiners still quoting 7.25 cents but reporting only occasional sales at this figure.

Carlot marketers generally reported their buying price in Oklahoma, north and west Texas as 6.25 cents, although one or two said they could buy goods at 6.125 cents. A small quantity of U. S. Motor from local refineries was reported available in Chicago at 6 to 6.25 cents, f.o.b. Group 3, but apparently it was not enough to be considered representative of the general going market.

The dullness which spread over the gasoline market was not so much in evidence on the higher gravities as on U. S. Motor and prices, especially of the 64-66, 375 and 68-70, 350-360 e.p. were generally unchanged. Several of the trade reported a fairly active demand and said that the export gasoline buying Dec. 14 apparently had had a steadying influence on these products.

Kerosenes continued practically lifeless with only a few small sales reported. The bulk of 41-43 w.w. was offered at 4.125 to 4.25 cents, although an occasional sale was reported at 4 cents. Sales of the 42-44 w.w. grade generally were at 4.50 to 4.75 cents.

The cold, stormy weather the past few days caused home burner owners to start calling for "fills" of furnace oils and tank wagon distributors of these products generally reported an excellent demand. However, in most sections of Chicago the snow was drifted so deep that it was extremely difficult to make deliveries.

The spot tank car market for all grades of gas and fuel oils of low cold test was more active, although many sellers said there had not been enough cold weather as yet to bring distributors into the spot market very heavily. Movement of contract gas and fuel oils was reported excellent by most sellers.

Prices of both dark and straw 32-36 zero gas oils were at least 0.125 cent higher. Good grades of both products were becoming harder to obtain for prompt shipment and the 32-36 straw zero was reported as almost unobtainable. There were practically no sellers offering this grade under 3.375 cents. Demand for industrial gas oil was quiet and a few sales were reported under the general quoted range of 2.75 to 3 cents. According to sellers of this commodity, many industrial plants were either closed down or running at only part capacity.

Fuel oil prices also were on the upgrade and were quoted 2.50 to 5 cents per barrel higher. The 28-30 and 18-22 zero fuels were exceedingly hard to obtain for prompt shipment. It was reported that only one or two refiners were now offering these grades on the open market. Some 28-30 zero was offered at $1.175 on Dec. 20, although most sellers quoted a minimum of $1.20. Two or three marketers reported sales of 18-22 high sulfur zero at $0.725, but most of the trade quoted $0.75 to $0.80 as the week ended.

Oil Trades Association Has Dinner for 150

NEW YORK, Dec. 23.—Under the expert management of A. J. Squires, Warren Lubricants Co., a dinner and program was presented to members of the New York Oil Trades Association Dec. 18 at the Park Central hotel, New York.

Approximately 150 members attended which was one of the best turn-outs the association has had. Such events have been held in the old Waldorf-Astoria, now being demolished. The affair was a five-course dinner at 8 o'clock, followed by an excellent entertainment provided by a number of vaudeville performers.

In arranging for the dinner Mr. Squires was assisted by E. A. Smith, also of the Warren Lubricants Co.

Dress your Oil Samples

—*in the best possible way*

No matter how fine oil may be, the impression which it makes can be strengthened by presenting it in Owens-Illinois hand-blown oil sample bottles.

These bottles are made of the finest perfume-bottle glass—clear and flawless. Special attention is given to the necks. They permit perfect and uniform corkage.

Your trade-mark blown on each bottle at a slight extra charge. Obtainable in 2, 4 or 8 oz. sizes. Samples gladly sent upon request. Owens-Illinois Glass Company, Toledo, Ohio.

OWENS·ILLINOIS
BOTTLES

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect December 23

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	‡7.1458	(Wt. Avg.)	‡7.1458	(Wt. Avg.)	.....
Kansas	6.50–6.75	.....	.....	.....	S. O. Neb. & Indiana Territory, etc.
Kansas	.....	.....	No sales reported	(Wt. Avg.)	Kansas only.
North Texas	6.375–6.75	.....	6.375–6.625	.....	.....
West Texas	6.50–6.75	.....	6.375–6.625	.....	.....
Louisiana-Arkansas	6.375–6.75	.....	.....	.....	Michigan, Ohio and Indiana.
Louisiana-Arkansas	.....	.....	7.25	.....	State or differential haul.
Indiana-Illinois	6.625–7.25	.....	..... *	.....	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

‡Saturday, Dec. 21, prices.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Chicago Resale Market

CHICAGO, Dec. 23

ZERO grades gas and fuel oils were more active in the Chicago market as the week ended and prices were higher on all grades. The 32-36 straw zero gas oil, 28-30 and 18-22 zero fuel oils were reported extremely difficult to obtain for prompt shipment. Gasoline market was very quiet. Carlot marketers quoted Mid-Continent U. S. Motor at 0.125-cent lower on Dec. 20. Bulk of sales reported were at 6.375 to 7 cents. A few Oklahoma and Chicago district refiners continued to quote U. S. Motor at 7.25 cents.

Following prices represent sales made on group 3 freight basis, although goods may originate elsewhere.

	Prices Dec. 23	Prices Dec. 16	Prices Dec. 9
58-60 U. S. Motor, 437 e.p.	6.375– 7.00	6.50 – 7.00	6.625– 7.25
60-62 437 e.p. gasoline	6.50 – 7.00	6.625– 7.25	6.75 – 7.50
60-62 400 e.p. gasoline	7.125– 7.50	7.125– 7.50	7.25 – 7.75
64-66 375 e.p. gasoline	7.75 – 8.00	7.875– 8.125	7.875– 8.125
68-70 350-360 e.p. gasoline	8.25 – 8.375	8.25 – 8.375	.....
41-43 w.w. kerosene	4.125– 4.25	4.125– 4.375	4.25 – 4.50
42-44 w.w. kerosene	4.50 – 4.75	.....	.....
38-40 straw distillate	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00
32-36 ordinary dark gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
32-36 dark zero gas oil	3.25 – 3.375	3.125– 3.25	3.125– 3.25
32-36 straw zero gas oil	†3.375– 3.50	†3.25 – 3.50	†3 25 – 3.50
28-30 zero fuel oil	†$1.175–$1.20	$1.175–$1.20	$1.15 –$1.20
28-30 fuel oil	$1.075–$1.125	$1.05 –$1.10	$1.05 –$1.10
24-26 fuel oil	$0.875–$0.925	$0.85 –$0.90	$0.85 –$0.90
18-22 fuel oil, low sulfur	$0.75 –$0.80	$0.70 –$0.75	$0.70 –$0.725
18-22 fuel oil, high sulfur zero	$0.75 –$0.80	$0.70 –$0.75	$0.70 –$0.75

Weighted Average Prices

OKLAHOMA

	‡Dec. 21		Dec. 16		Dec. 9	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor, 437 e.p.	21	7.1458	27	7.1204	42	7.2321
60-62 437 e.p. gasoline	No sales reported		No sales reported		No sales reported	
60-62 400 e.p. gasoline	6	7.1667	4	7.5625	4	7.5000
64-66 375 e.p. gasoline	2	8.0000	2	8.0000	6	7.7917

KANSAS

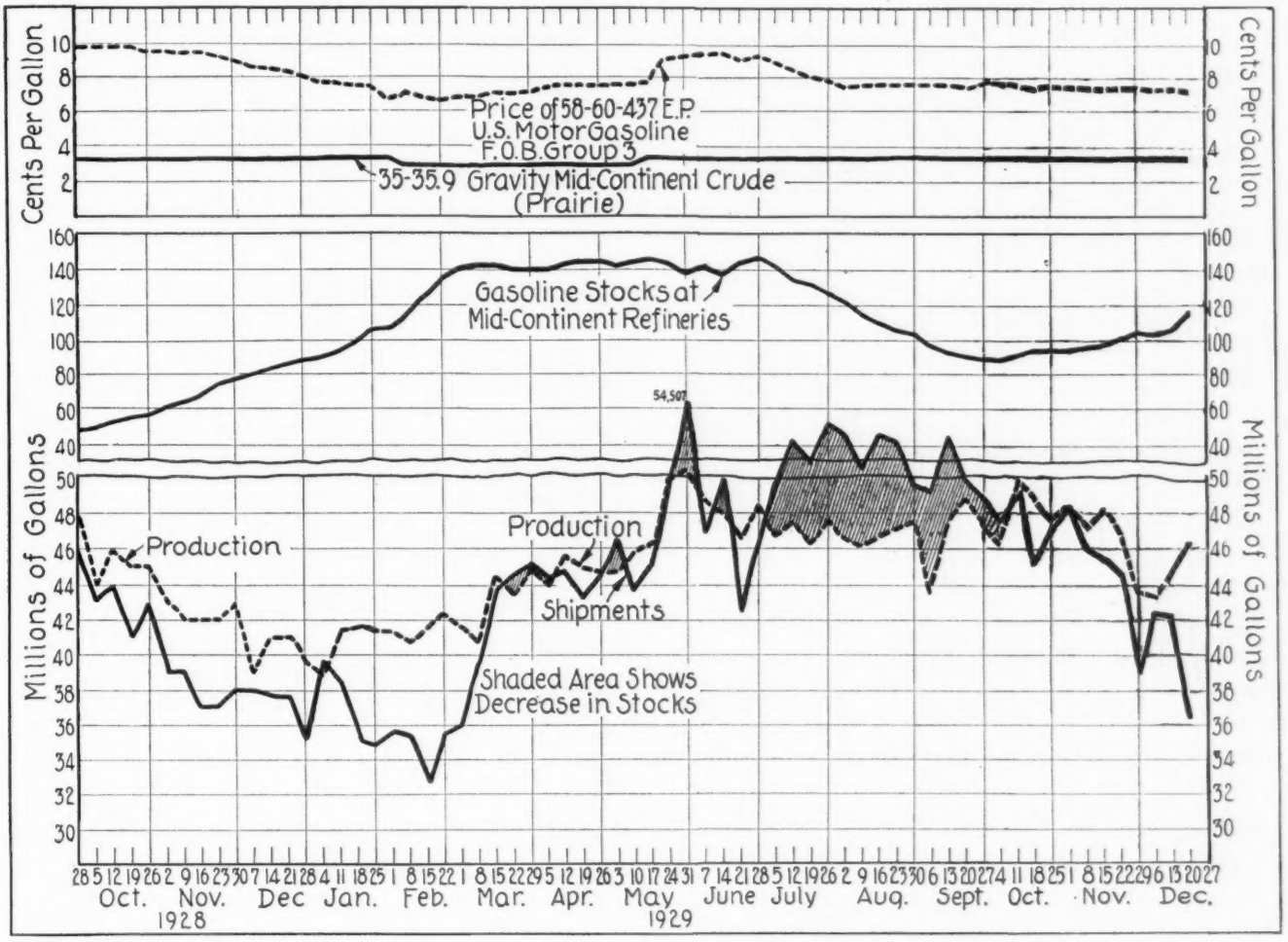
	‡Dec. 21		Dec. 16		Dec. 9	
	No. of cars	Price	No. of cars	Price	No. of Cars	Price
58-60 U. S. Motor, 437 e.p.	No sales reported		No sales reported		1	7.5000

‡Due to this publication going to press one day earlier on account of the Christmas holiday, no weighted average prices as of Monday, Dec. 23, were available for this issue. Above are Saturday, Dec. 21, weighted averages. They will be corrected in the issue of Jan. 1 to Monday's prices.

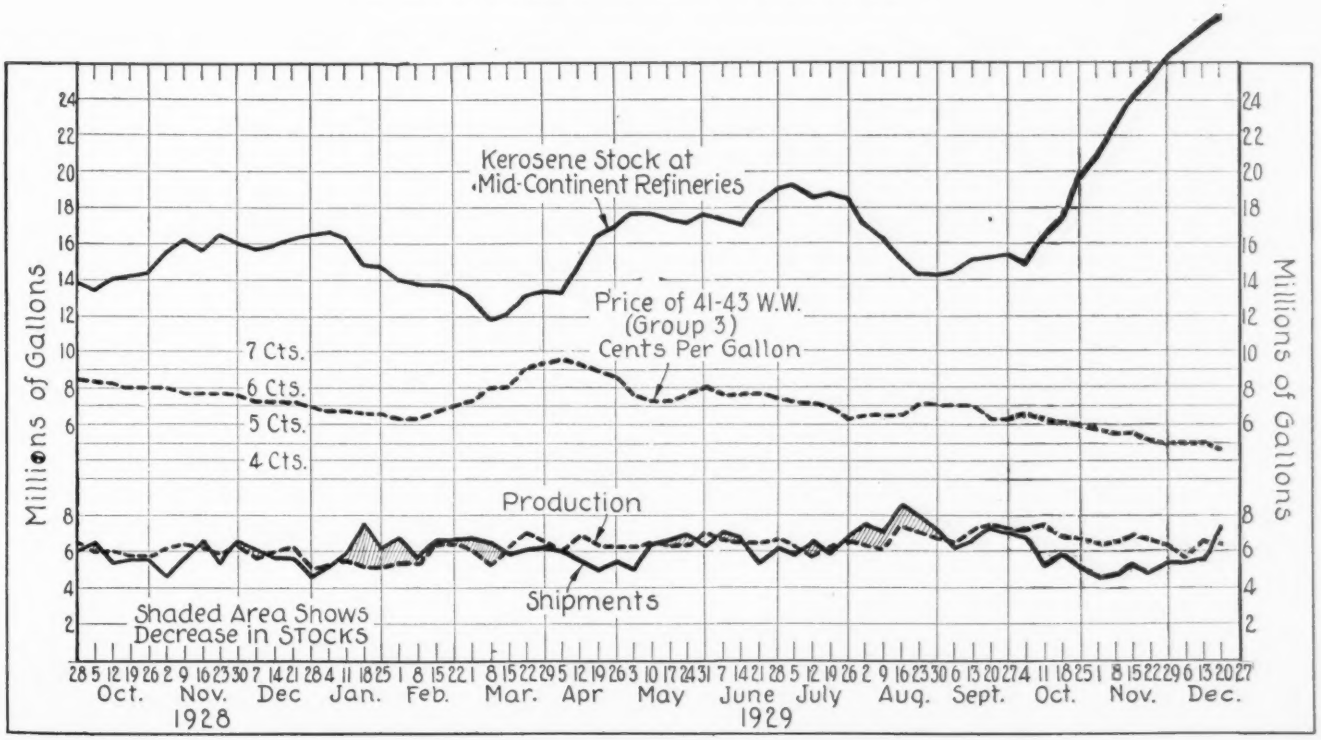
†Prices nominal

Barometer of Mid-Continent Refinery Market—Week Ending December 20

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Gasoline Stocks at Mid-Continent Refineries
54,507
Millions of Gallons
Production
Shipments
Shaded Area Shows Decrease in Stocks
Oct. Nov. Dec Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1928
1929

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 98



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA	Prices Dec. 23	Prices Dec. 16	Prices Dec. 9
48-50 450 e.p. naphtha...	6.75 – 7.00	6.625– 7.00	6.50 – 7.00
50-52 450 e.p. naphtha...	6.75 – 7.00	6.625– 7.00	6.50 – 7.00
56-58 450 e.p. gasoline...	6.375– 6.75	6.50 – 6.75	6.625– 6.75
58-60 450 e.p. gasoline...	6.50 – 6.75	6.50 – 6.75	6.625– 6.75
64-66 390 e.p. gasoline...	7.50 – 7.625	7.50 – 7.625	7.625
68-70 350-360 e.p. gasoline	8.125– 8.25	8.25	8.25 – 8.375
PENNSYLVANIA			
52-54 Naphtha.....	7.25 – 8.00	7.25 – 8.00	7.25 – 8.00
54-56 Naphtha.....	7.25 – 8.25	7.25 – 8.25	7.25 – 8.25
58-60 U.S. Motor 437 e.p.	7.875– 8.75	8.00 – 9.00	8.00 – 9.00
60-62 400-410 e.p. gasoline	8.25 – 9.00	8.375– 9.00	8.375– 9.00
64-66 390 e.p. gasoline....	8.50 – 9.50	8.50 – 9.50	8.625– 9.50
68-70 350-360 e.p.....	9.50 –10.50	9.50 –10.50	9.75 –10.50
OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)			
U. S. Motor Gasoline			
Ohio, delivery at any point.....	9.50	9.50	10.00
KANSAS (F. O. B. refinery Kansas destination)			
60-62 400 e.p. gasoline...	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
64-66 375 e.p. gasoline...	7.75 – 8.25	7.75 – 8.25	7.75 – 8.00
NORTH TEXAS			
56-58 450 e.p. gasoline...	6.25 – 6.625	6.375– 6.625	6.375– 6.625
58-60 450 e.p. gasoline...	6.25 – 6.625	6.375– 6.625	6.375– 6.625
58-60 U.S. Motor 437 e.p.	6.375– 6.625	6.50 – 6.75	6.50 – 6.75
60-62 400 e.p. gasoline...	6.875–*7.125	6.875– 7.25	7.00 – 7.25
64-66 390 e.p. gasoline...	7.50 – 7.625	7.50	7.375– 7.625
64-66 375 e.p. gasoline...	7.75 – 7.875	7.75	7.75 – 8.00
68-70 350-360 e.p. gasoline	8.125– 8.375	8.00 – 8.25	8.125– 8.375
****WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)**			
50-52 naphtha.....	5.75	5.75 – 6.00	6.00
58-60 437 e.p. gasoline...	6.25 – 6.375	6.25 – 6.50	6.25 – 6.50
58-60 U.S. Motor 437 e.p. gasoline.....	6.375– 6.625	6.50 – 6.75	6.50 – 6.75
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	7.25	7.25	7.25
ARKANSAS (Ark., N. La. and Miss. destination)			
58-60 U.S. Motor 437 e.p.	7.25	7.25	7.25
CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)			
54-58 U.S. Motor 437 e.p.	‡9.50 –10.50	‡9.50 –10.50	9.50 –10.50
58-61 375-400 e.p. gasoline	10.50 –11.00	10.50 –11.50	10.50 –11.50
42-45 Engine Distillate 445-480 e.p.....	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00

‡For outside state shipment price was 7.25–8.25c on Oct. 21. 7.00–8.00c on Oct. 28 and Nov. 4. 6.50–7.25c on Nov. 11, 18 and 25. 7.00–7.75 on Dec. 2, 9, 16, and 23.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery.....	‡6.25	6.375	6.375
Grade A, 72-79.9, 90% Recovery.....	‡6.50 – 6.625	6.625	6.625
Grade BB, 84-92, 85% Recovery.....	‡5.625	5.75 – 5.875	5.875– 6.00
Grade B, 76-83.9, 85% Recovery.....	‡6.00 – 6.125	5.75 – 5.875	5.875– 6.00
Grade C, 80-92, 78% Recovery.....	‡5.625	5.75	5.75
‡Saturday, Dec. 21 prices.			
NORTH TEXAS (F. o. b. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery.....	‡6.25	6.375	6.375
Grade A, 72-79.9, 90% Recovery.....	‡6.50 – 6.625	6.625	6.625
Grade BB, 84-92, 85% Recovery.....	‡5.625	5.75 – 5.875	.00 – 6.125
Grade B, 76-83.9, 85% Recovery.....	‡6.00 – 6.125	5.75 – 5.875	6.00 – 6.125
Grade C, 80-92, 78% Recovery.....	‡5.625	5.75	5.875
‡Saturday, Dec. 21 prices.			
NORTH LOUISIANA (F. o. b. Monroe District)			
Grade AA.....	‡†6.50	†6.75	†6.75
Grade BB.....	‡†6.00	†6.25	†6.25
Grade C.....	‡†6.00	†6.25	†6.25
‡Saturday, Dec. 21 prices.			
CALIFORNIA			
75-85, 375-390 e.p. blend	8.50 – 9.00	8.50 – 8.75	8.50 – 9.00

†Prices nominal ††Only one refiner quoting *Quotations only

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene.....	6.00 – 6.25	6.125– 6.50	6.25 – 6.75
46 w.w. kerosene.....	6.25 – 6.50	6.50 – 6.75	6.625– 7.00
47 w.w. kerosene.....	6.50 – 7.00	6.75 – 7.25	6.75 – 7.25
300 mineral seal.....	7.00 – 7.50	7.00 – 7.75	7.00 – 7.75
OKLAHOMA			
41-43 w.w. kerosene.....	4.125– 4.50	4.25 – 4.75	4.25 – 4.75
42-44 w.w. kerosene.....	4.375– 5.00	4.50 – 5.00	4.50 – 5.25
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene.....	4.50 – 5.00	4.75 – 5.00	4.75 – 5.00
42-44 w.w. kerosene.....	5.00 – 5.25	5.00 – 5.25	5.00 – 5.50
NORTH TEXAS			
40-42 w.w. kerosene.....	4.00 – 4.125	4.00	4.00
41-43 w.w. kerosene.....	4.125– 4.25	4.00 – 4.25	4.00 – 4.25
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene.....	5.25	5.00 – 5.25	5.00 – 5.25
42-44 w.w. kerosene.....	5.50	5.25 – 5.50	5.25 – 5.50
ARKANSAS (Ark., N. La. and Miss. destination)			
42-44 w.w. kerosene.....	5.50	5.50	5.25 – 5.50
CALIFORNIA			
38-40 w.w. kerosene.....	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00

NEUTRAL OIL

PENNSYLVANIA			
Vis.		**(Viscosity at 70°F.)**	
200 No. 3 Assoc. Filt....	24.50 –27.00	24.50 –27.00	24.50 –27.00
180 No. 3 Assoc. Filt....	19.50 –23.00	19.50 –23.00	19.50 –23.00
150 No. 3 Assoc. Filt....	15.25 –18.00	15.50 –18.00	15.50 –18.00
		(Non Viscous)	
34 Grav. 330-340 Flash..	7.00 – 7.50	7.00 – 7.50	7.25 – 7.75
****OKLAHOMA**			
Vis. Color		**(Viscosity at 100°F.)**	
100—No. 2.....	6.00 – 7.50	6.00 – 7.50	6.00 – 7.00
150—No. 3.....	7.50 – 8.50	7.50 – 8.50	7.50 – 8.00
150—No. 4.....	6.75 – 8.00	6.75 – 8.00	6.75 – 7.50
180—No. 3.....	9.00 –10.00	9.00 –10.00	9.00 – 9.50
180—No. 4.....	8.75 – 9.50	8.75 – 9.50	8.75 – 9.00
180—No. 5.....	8.50 – 9.00	8.50 – 9.00	8.50 – 8.75
200—No. 3.....	10.00 –12.00	10.00 –12.00	10.00 –12.00
200—No. 4.....	10.00 –11.00	9.00 –11.00	9.00 –11.00
200—No. 5.....	9.50 –11.00	9.50 –11.00	9.50 –11.00
220—No. 3.....	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4.....	12.00 –12.50	12.00 –12.50	12.00 –12.50
220—No. 5.....	11.00 –12.00	11.00 –12.00	11.00 –12.00
240—No. 3.....	13.00 –16.00	13.00 –16.00	13.00 –16.00
240—No. 4.....	12.00 –13.75	12.00 –13.75	12.00 –13.00
240—No. 5.....	11.00 –13.00	11.00 –13.00	11.00 –13.00
280—No. 3.....	15.50 –17.00	15.50 –17.00	15.00 –16.00
280—No. 4.....	14.00 –17.00	14.00 –17.00	13.00 –16.00
280—No. 5.....	12.75 –14.75	12.75 –14.75	12.00 –14.00

**Represents Both Sales and Quotations.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL

Vis. Color	Prices Dec. 23	Prices Dec. 16	Prices Dec. 9
	(Viscosity at 100°F., pour test 0)		
100—No. 2 Pale	6.00 – 7.00	6.00 – 7.00	6.00 – 7.00
200—No. 3 Pale	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
300—No. 3 Pale	10.00 –10.75	10.00 –10.75	10.00 –10.75
500—No. 3½ Pale	11.50 –12.00	11.50 –12.00	11.50 –12.00
750—No. 4 Pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
200—No. 5½ Red Oil	8.00 – 8.75	8.00 – 8.75	8.00 – 8.75
300—No. 5½ Red Oil	9.00 –10.00	9.00 –10.00	9.00 –10.00
500—No. 6 Red Oil	9.50 –10.00	9.50 –10.00	9.50 –10.00
750—No. 6 Red Oil	11.50 –12.00	11.50 –12.00	11.50 –12.00

CALIFORNIA

Vis. Color		(Viscosity at 100°F.)	
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50	11.50	11.50
300—No. 3	13.00	13.00	13.00
450—No. 3	15.50	15.50	15.50
550—No. 3	16.50	16.50	16.50
600—No. 3	17.00	17.00	17.00
200—No. 5	11.00	11.00	11.00
300—No. 5	12.00	12.00	12.00
400—No. 5	14.00	14.00	14.00
500—No. 5	15.00	15.00	15.00
600—No. 5	16.00	16.00	16.00
700—No. 7	18.00	18.00	18.00

CYLINDER STOCKS

**OKLAHOMA

190-200 Vis. D at 210° Brt. St.	41.00 –42.00	42.00	42.00
150-160 Vis. D at 210° Brt. St.	37.00	37.00	37.00
150-160 Vis. E 210° Brt. St.	35.00 –36.00	35.00 –36.00	35.00 –36.00
600 St. Ref. Olive Green	9.00 –10.00	9.00 –15.00	9.00 –17.00
600 St. Ref. Dark Green	9.00	9.00 –11.00	9.00 –11.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (A. S. T. M. Tests)

600 Steam Refined, filterable	25.00 –26.00	25.00 –26.00	26.00 –27.00
650 Steam Refined	29.50 –31.00	30.00 –31.00	30.50 –31.50
600 Flash	32.00 –33.00	32.50 –34.50	32.50 –34.50
625 Flash	36.00 –36.50	36.00 –37.00	36.00 –37.00
600 Warren E	32.00 –32.50	32.00 –32.50	32.00 –32.50
600 Oil City E	30.50 –31.00	30.50 –32.00	30.50 –32.00
600 D Filtered	36.00 –37.00	36.00 –37.00	36.50 –37.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	45.00 –47.00	45.00 –47.00	‡46.00 –47.50
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	42.50 –44.00	43.00 –45.00	44.00 –46.00

‡Lower pour test stock quoted 1 to 2 cents higher.

WAX

PENNSYLVANIA (Per pound, New York)

122-124 white crude scale, a.m.p.	3.125	3.00 – 3.125	3.125– 3.25
124-126 white crude scale, a.m.p.	3.125	3.00 – 3.125	3.125– 3.25

**OKLAHOMA

124-126 White Crude Scale, a. m. p.	3.00	3.00	3.00

CALIFORNIA

White crude scale, per pound, ton lots, a.m.p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	4.625– 5.00	4.50 – 5.00	4.75 – 5.00
30-34 fuel oil	4.625– 4.875	4.50 – 4.75	4.625– 4.75
28-32 fuel oil	4.625– 4.875	4.50 – 4.75	4.625– 4.75

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA

	Prices Dec. 23	Prices Dec. 16	Prices Dec. 9
38-40 straw distillate	3.75 – 3.875	3.75	3.75 – 4.00
36-38 straw distillate	3.75	3.625– 3.75	3.75
32-36 straw gas oil	3.00 – 3.25	3.00 – 3.25	3.00 – 3.125
32-36 straw gas oil zero	3.375– 3.50	3.375– 3.50	3.25 – 3.50
32-36 dark gas oil	2.875– 3.00	2.875– 3.125	2.875– 3.00
32-36 dark gas oil zero	3.25 – 3.50	3.25 – 3.375	3.25 – 3.375
28-30 zero fuel oil	†$1.20 – 1.25	†$1.20 – 1.25	$1.20
28-30 fuel oil (in bbls.)	$1.10 – 1.15	$1.10 – 1.175	$1.10 – 1.15
26-28 fuel oil (in bbls.)	$0.975– 1.05	$0.975– 1.05	$0.95 – 1.05
24-26 fuel oil (in bbls.)	$0.95 – 1.00	†$0.95 – 1.00	$0.90 – 1.00
22-26 fuel oil (in bbls.)	$0.90 – 0.95	$0.85 – 0.90	$0.80 – 0.90
18-22 fuel oil (in bbls.)	$0.75 – 0.80	$0.75 – 0.80	$0.75 – 0.775
16-20 fuel oil (in bbls.)	$0.70 – 0.80	$0.65 – 0.80	$0.65 – 0.80
14-16 fuel oil (in bbls.)	$0.70 – 0.80	$0.65 – 0.80	$0.65 – 0.80

KANSAS (F. O. B. refinery Kansas destination)

38-40 straw distillate	4.00 – 4.25	4.00 – 4.25	4.00 – 4.125
36-38 straw distillate	3.875– 4.00	3.875– 4.00	4.00
32-36 straw gas oil	3.375– 3.50	3.375– 3.50	3.25 – 3.50
18-22 fuel oil	$0.825– 0.90	$0.825– 0.90	$0.80 – 0.90
10-14 fuel oil	$0.75 – 0.85	$0.75 – 0.825	$0.775– 0.825

NORTH TEXAS

38-40 straw distillate	3.625– 3.75	3.50 – 3.75	3.625– 3.75
38-40 p.w.treated distillate	3.75 – 3.875	3.75 – 3.875	3.75 – 4.00
32-36 gas oil, cracked	3.00 – 3.25	2.75 – 3.125	2.75 – 3.00
32-36 St. reduced gas oil	2.50 – 2.75	2.50 – 2.75	2.625– 2.75
24-26 fuel oil (in bbls.)	$0.70 –$0.80	$0.75	$0.725– 0.75
20-24 fuel oil	$0.625– 0.70	$0.625– 0.70	$0.60 – 0.70
18-22 fuel oil	$0.65	$0.65	$0.60 – 0.65

**WEST TEXAS (F. o. b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.625– 2.75	2.50 – 2.75	2.625– 2.75
30-32 gas oil	2.50 – 2.75	2.50 – 2.75	2.375– 2.75
28-30 zero gas oil	3.00 – 3.125	3.00 – 3.125	3.00
18-22 fuel oil	$0.60 – 0.70	$0.60 – 0.70	$0.575– 0.70

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	3.50	3.50	3.50
32-36 gas oil, straw	3.50	3.50	3.50
14-16 fuel oil (in bbls.)	$0.75 – 0.85	$0.75 – 0.85	$0.75 – 0.85

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	3.50	3.50	3.50
32-36 dark gas oil	3.50	3.50	3.50
28-30 gas oil	3.25	3.25	3.25
20-24 fuel oil	$0.95	.....	.....
‡9-12 fuel oil	$0.70	$0.75 – 0.85	$0.75 – 0.85
Black oil	3.25	.....	.....

‡Gravity changed from 14-16 fuel oil to 9-12 fuel oil Dec. 23.

CALIFORNIA (F. o. b. San Joaquin Valley. At San Francisco 4c per bbl. more)

14-18 fuel oil (per bbl.)	$0.45 –$0.60	$0.40 –$0.60	$0.40 –$0.60
14-18 Bunker oil (per bbl.)	$0.65 –$0.75	$0.70 –$0.75	$0.70 –$0.75
30-34 gas oil (per bbl.)	$0.80 –$0.90	$0.80 –$0.90	$0.80 –$0.90
27 Plus Diesel oil (per bbl.)	$0.80 –$0.90	$0.80 –$0.90	$0.80 –$0.90

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ⅛c to ¾c per pound less.) Two refiners quoting.

Snow White	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
Lily White	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
Cream White	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Light Amber	3.75	3.75	3.75
Amber	3.50	3.50	3.50
Red	3.25	3.25	3.25

PETROLEUM COKE

**OKLAHOMA

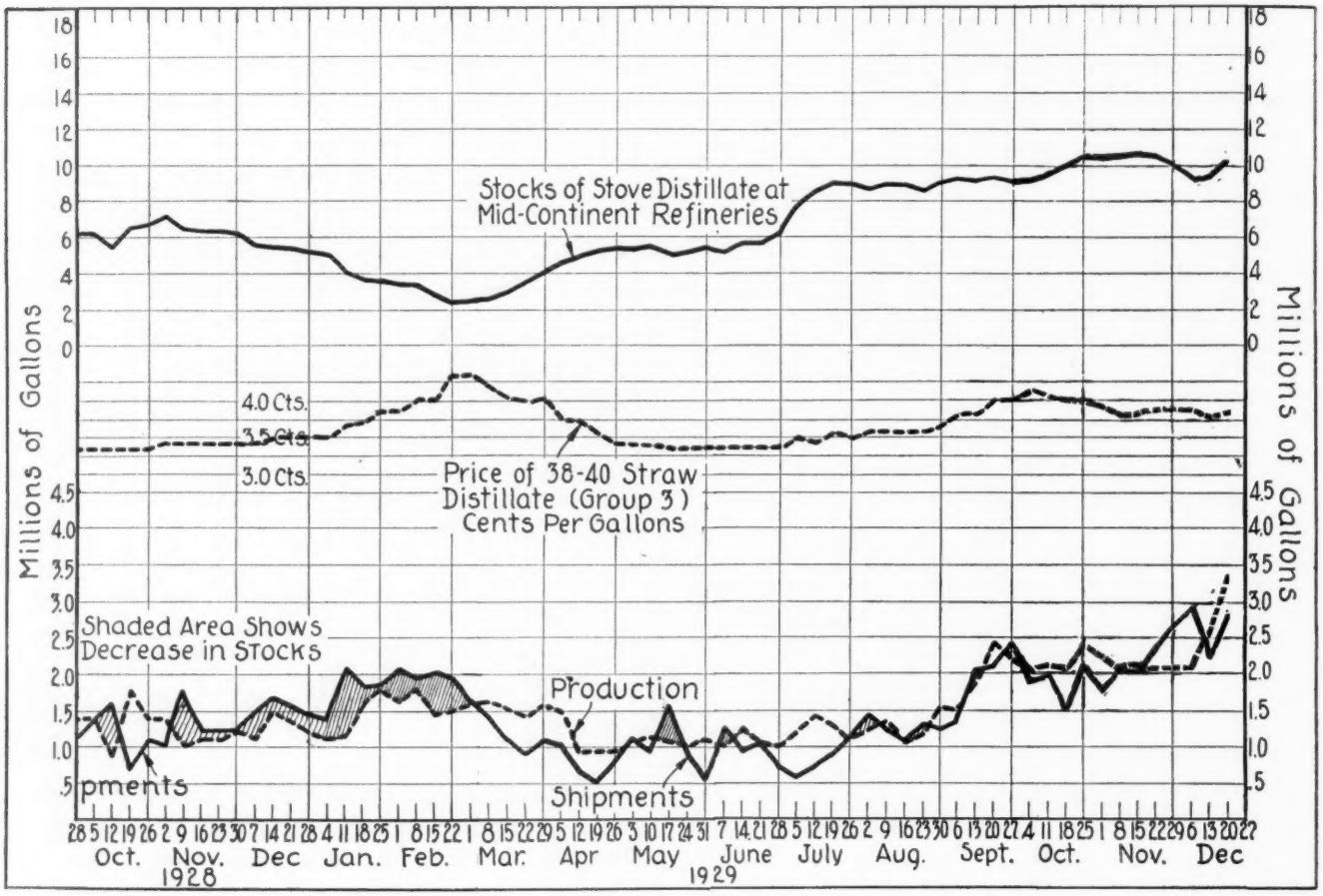
(Per ton in car lots)

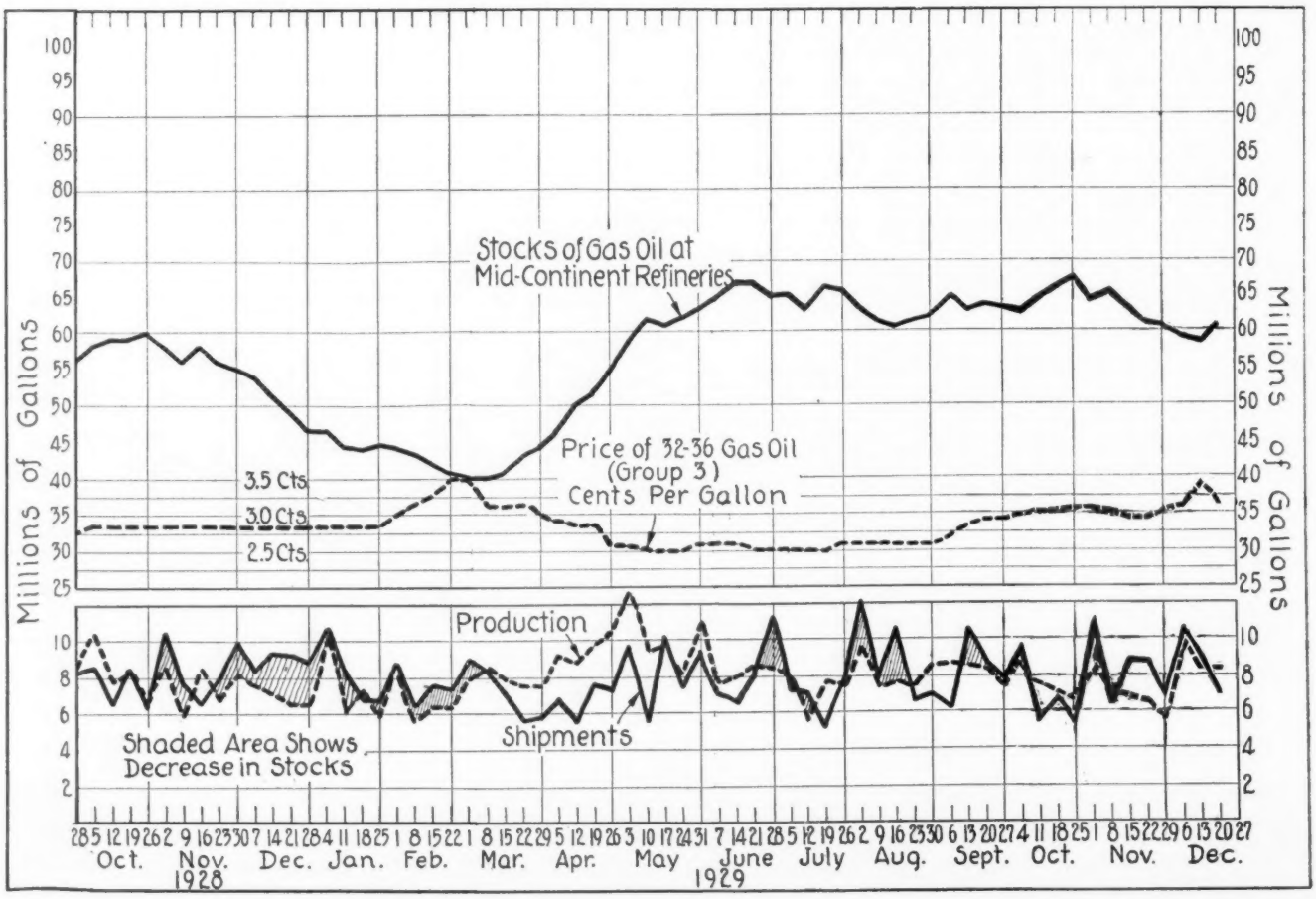
Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

**Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending December 20

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 98 Plants to National Petro leum News


Millions of Gallons
Millions of Gallons
Stocks of Stove Distillate at Mid-Continent Refineries
4.0 Cts.
3.5 Cts.
3.0 Cts.
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallons
Shaded Area Shows Decrease in Stocks
Production
Shipments
Oct. Nov. Dec Jan. Feb. Mar. Apr May June July Aug. Sept. Oct. Nov. Dec
1928
1929


Millions of Gallons
Millions of Gallons
Stocks of Gas Oil at Mid-Continent Refineries
3.5 Cts.
3.0 Cts.
2.5 Cts.
Price of 32-36 Gas Oil (Group 3) Cents Per Gallon
Production
Shipments
Shaded Area Shows Decrease in Stocks
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1928
1929

Your Customers will Appreciate This Easy and Profitable Service

THE minute a fellow finds his gas tank cap gone—he wants a new one. No shopping around. He wants it *then and there!* If you're not ready to supply him, you may lose the sale of gas and oil.

There's fine service business waiting for you on Monmouth Gas Tank Caps—an opportunity to do your customer a favor, without sales effort, and with a nice profit on every transaction.

Monmouth Caps fit every car. Go on easily with just one-eighth of a turn—leak proof—rattle proof—can't be lost. A safety chain connects each cap permanently with the gas tank.

And an attractive display board is furnished to do all the necessary selling—takes no time or effort away from the regular business of selling gas and oil.

One car out of every twelve lost a gas tank cap last year—most of these were replaced by Monmouth at filling stations.

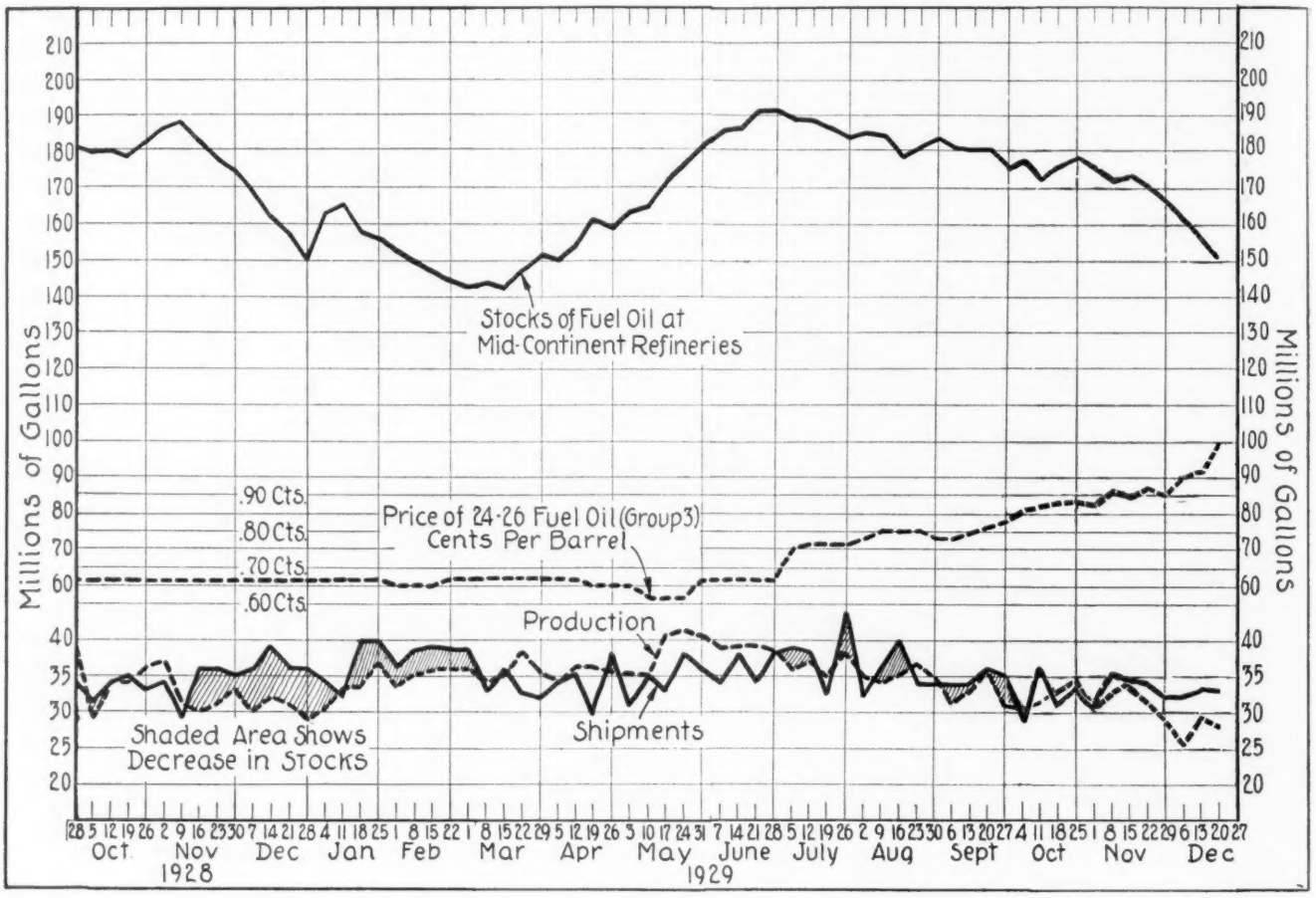
Made and sold by
THE EATON BUMPER & SPRING SERVICE CO.
Cleveland, Ohio

Branches: Atlanta, Boston, Chicago, Cleveland, Dallas, Denver, Kansas City, Philadelphia

Fit every car
Never get lost
Can't rattle
Go on easily
Come off quickly
Leak-proof

Barometer of Mid-Continent Refinery Market—Week Ending December 20

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Millions of Gallons
Millions of Gallons
Stocks of Fuel Oil at Mid-Continent Refineries
.90 Cts.
.80 Cts.
.70 Cts.
.60 Cts.
Price of 24-26 Fuel Oil (Group 3) Cents Per Barrel
Production
Shipments
Shaded Area Shows Decrease in Stocks
Oct Nov Dec Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec
1928
1929

California Refinery Market

Year End Slump Hits Western Markets

LOS ANGELES, Dec. 21

THE usual end of the year slump hit California markets the past week. Buyers were busy cleaning up their current stocks so as to have as little inventory as possible and subsequently there was little interest in the spot market.

Notwithstanding the ever increasing storage of refined products on the Pacific Coast, prices were fairly steady. The inability of several independent companies to move gasoline through export channels resulted in these companies having a surplus that must be unloaded very soon, they said, if the daily runs to stills are not reduced.

A cargo of U. S. Motor gasoline was reported sold for delivery to the Atlantic seaboard by one of the major companies but neither the identity of the buyer nor the price paid could be obtained. Several eastern brokers were still in the market for gasoline.

The majority of quotations for U. S. Motor for export continued to range from 6.25 to 7 cents. One or two refiners were asking still higher prices. Tanker rates for January loading are reported to be $1.05 per barrel. In view of the present price of gasoline on the Atlantic seaboard, this precludes the possibility of any large quantity of gasoline moving intercoastal, several traders reported.

Demand for gasoline for shipment out of the state continued good; the bulk of this class of movement was at 7 to 7.75 cents. Due to the steady demand, very little gasoline has been sold below 7 cents a gallon.

The Anaconda Copper Co. was reported seeking a contract for California fuel oil to be used in Arizona. The inquiry was reported as specifying 1,000,000 barrels over next year with the option of an equal amount the following year at the same price. Although confirmation was lacking, it was reported the deal had been closed at prices ranging from $0.52 to $0.55 per barrel.

General speaking, fuel oil was slightly more active with quotations ranging from $0.45 to $0.60 per barrel.

U. S. Motor gasoline for shipment within the state brought prices ranging from 9.50 to 10.50 cents, tax to be added. In contrast to the market of the previous week, few spot sales were reported at less than 9.50 cents.

Manufacturers of natural gasoline marked up their prices to a range of 8.50 to 9 cents as result of continued good demand for this commodity.

Other refinery products remained generally unchanged during the past week.

OSAGE, Wyo.—The Northwestern Petroleum Co., with headquarters here, is distributing the new waxfree Havoline motor oil through Oregon.

En-ar-co
MOTOR OIL
White Rose
GASOLINE

YOU will make money if you handle these nationally advertised brands.

All grades of lubricating oils and greases.

The National Refining Co.
Cleveland, Ohio

COLOR

COLOR, as a merchandising help, has been boosting the sales of innumerable products. From motor conveyances to perambulators, from dainty sun-room fittings to kitchen tables, *Color* has given new life. In Wisconsin, a manufacturer of sanitary plumbing fixtures has created an everlasting niche for himself, simply by giving a touch of *Color*.

And now, the gasoline industry, having developed motor fuels of better properties, calls in *Color* to aid it in presenting its new product. For, *Color* distinguishes. *Color* impresses. *Color* attracts. *Color* invites.

That the public has accepted *Colored* gasoline is attested by the fact that, from the Atlantic to the Pacific, from far north of the Canadian line to the Mexican border, motorists are buying in increasing volume Blue Gasoline, Green Gasoline, Purple Gasoline, Violet Gasoline, as well as Red Gasoline. Yes, of different tints, for in the scale of colors there are varieties distinct enough to afford individualism for the most exacting. Dykem *Colors* are being widely used in this means of *Color*-branding.

Are you using *Color* to help you in the sale of your new motor fuels? If not, there is a *Dukem Color* that can also materially assist you.

Just write, telling us Colors you would like to see, and samples will be gladly sent you.

DYESTUFFS & CHEMICALS, INCORPORATED

11th & Monroe Sts. St. Louis, Mo.

Pennsylvania Market

U. S. Motor Drops Under 8 Cents

CLEVELAND, Dec. 21.—Western Pennsylvania markets were lacking in any particularly outstanding feature in the week ended Dec. 21. The minimum price for 58-60 U. S. Motor gasoline slipped below 8 cents for the first time in many months and 45 water white kerosene again was down around the 6 cent level. However, quotations for the majority of commodities showed but little variation from those prevailing at the end of the previous week.

Reports from traders in the various districts continued to be greatly at variance with reference to the status of the market, but, generally speaking, the market was unchanged from this standpoint also.

Kerosene, 45 gravity water white, was freely offered the past week at 6.125 cents. Reports of goods moving at 6 cents early in the week lacked confirmation but sales were checked at this figure on Dec. 20 and 21. Some goods for shipment into Cleveland was reported to have sold as low as 5.875 cents but verification of these reports also was lacking.

There were reports from sources considered authentic that large eastern distributors were ready to step in and place orders for large quantities of kerosene when and if the market got down to 6 cents. Buying of this nature had failed to materialize up to the close of business Dec. 21 as far as NATIONAL PETROLEUM NEWS could learn.

The weather as usual was blamed by most traders for the further recession in gasoline prices, although some asserted that it was distress gasoline which had brought about the slump. U. S. Motor gasoline was quoted at 7.875 cents a gallon by traders in some districts against a minimum of 8 cents a week ago. The higher gravity gasolines also were off 0.125 to 0.25 cent.

Fuel oil demand was stimulated somewhat by the cold wave that swept the middle west and the east. Some sellers advanced their prices 0.125 cent but low cold test oil, as well as higher cold test grades, still was available at 4.625 cents in some districts.

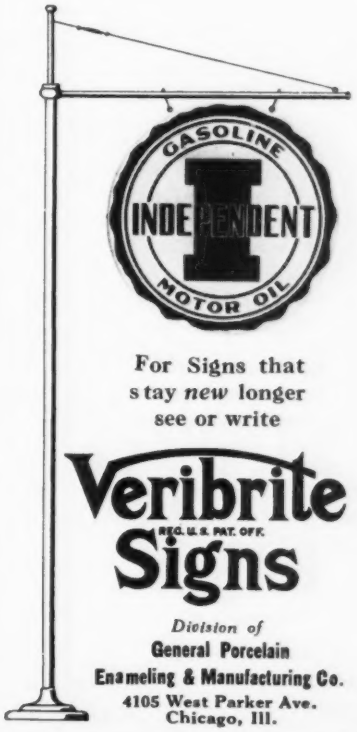
Neutral oils, bright stock, and cylinder oils were generally unchanged. Concensus of opinion on the status of these oils was that demand was normal for the season.

Wax prices reacted upward slightly. Crude scale, slightly off white in color was reported available at 3 cents, but 3.125 cents was the low quotation for white crude scale.

"A Happy New Year you users of VERIBRITE Signs should have for you know very well that my many destructive elements fail to ruin their bright, colorful luster."

Old Man Weather

[*Veribrite Signs are genuine porcelain, enameled on specially processed iron.*]



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Division of
General Porcelain Enameling & Manufacturing Co.
4105 West Parker Ave.
Chicago, Ill.

Eastern Domestic Markets

Bad Weather Hampers Gasoline Movement

Staff Special
NEW YORK, Dec. 21

SOME shading of prices was reported in various eastern seaboard districts for gas oil and gasoline the past week but markets generally were unchanged. Gasoline shipments were hampered at New York and in New England because of bad weather, conditions at New York almost precipitating a detrimental shortage. A cargo of gasoline was reported sold for shipment from California to the east coast.

Price shading continued to be reported at New York and in Baltimore for gasoline; no suppliers, however, revised their general prices to meet the reported competition. Some business at New York has been done as low as 8.50 cents but this was an unusual price and applied to distant shipments. Near the harbor the general price was 8.75 cents with occasional cars moving at 8.625 cents. This price applied both to contract and spot movement in a number of cases.

Baltimore sellers reported competition at 8.75 cents but not in a sufficient number of instances to cause alarm. One seller reported he was taking some business at 8.75 cents, and had been for the past two or three weeks, but it was for goods moving in competition with Philadelphia.

The low gas oil quotation of 4.75 cents has been shaded but not on a large volume of tank car business. It was reported a New York seller had sold some goods for up-state shipment at 4.625 cents. The order specified approximately 200,000 gallons to move by barge. The same price was quoted on a similar piece of business but the sale had not been closed up to Friday.

A heavy fog which hung over New York harbor the first four days of the week, greatly hampered barge movement of gasoline. Jobbers have been holding their gasoline storage at a minimum and consequently when they were unable to obtain goods for three or four days the situation became rather acute.

Refiners' storages were down to an alarming level and in many cases they were taking care of only their contract customers. One refiner was forced to turn one of his regular customers over to another seller because he did not have the goods to deliver.

A somewhat similar condition was reported in New England where snow and sleet held up shipments.

California gasoline has been moving only fairly well although prices of 9 cents at New York, Baltimore and Philadelphia, were unchanged. One sale, a cargo lot, was reported made on the west coast late in the week at 6 cents, f.o.b. San Pedro. It was for shipment to Baltimore. This buyer reported he had obtained the same price on a cargo for March shipment.

This was the first spot sale reported for several weeks. California suppliers have been quoting from 6.25 to 7 cents, with the majority of the eastern trade of the opinion that plenty of goods was available at the lower price. Some had lower ideas of prices which were substantiated by the sale reported this week.

Tanker fixtures for clean boats which fell off during the early part of the week, were again higher at the end of the week and close to the prices asked for inter-coastal movement last week. One boat was fixed at $0.90 a barrel Tuesday, it was reported. At that time four owners were said to be offering clean bottoms which pushed the rate down. All four were said to have been within one or two trips of being without business and naturally their owners were anxious to tie them up with other companies.

As far as could be learned all of these boats were chartered for future movement although prices were withheld. Late in the week the company paid $0.98 for a clean ship and owners were asking up to $1.00.

Kerosene prices on the seaboard were unchanged.

Gulf Coast Markets

Mexican Oils Scarce, Prices Higher

Staff Special
NEW YORK, Dec. 21

PRICES for some commodities for export movement were higher at the Gulf the past week, while gasoline and gas oil prices for domestic shipment were off slightly. Prices posted by the Export Petroleum Association were unchanged. Foreign buyers displayed very little interest in the market.

Heavy Panuco crude prices, f.o.b. Tampico, were higher at the end of the past week. Suppliers' ideas were from $0.70 to $0.80 per barrel in comparison with $0.65 to $0.70 a week ago. Some goods were reported sold to a Swedish concern on a c.i.f. basis, which netted slightly better than $0.70 f.o.b. Tampico. The details of this sale could not be learned although it was reported that one full cargo already had moved.

Suppliers reported that only a comparatively small amount of Panuco crude was available for prompt shipment due to the curtailment program in force in Mexico. A New York trader who reported the oil very scarce said $0.85 per barrel was his idea of the price. He was almost alone in his opinion although others of the trade said that one supplier was asking $0.85.

Bunker C fuel oil also was higher at Tampico, being quoted $0.95 to $1.00 per barrel. Stocks of this commodity were said to be small. The market still was tending upward at the end of the week and one or two sellers believed it would be $1.00 flat within a few weeks.

Various reports were heard on prices for bulk shipments of Bunker C fuel oil from the U. S. Gulf although the majority of suppliers' opinions of prices were unchanged at $0.70 to $0.75. One supplier believed the market showed upward tendencies and that $0.80 per barrel was not out of line. Another seller had quoted $0.80 on some business which he did not get. Still another seller said it was possible to shade $0.70 on small lots; he believed that a cargo or two might be picked up at that figure.

Bulk gasoline and kerosene spot sales were out of the picture the past week as far as foreign buyers were concerned. There were no inquiries reported and no business placed. Contract shipments by American refiners to their foreign subsidiaries, however, were reported heavy.

For domestic shipment from the Gulf, suppliers' ideas of U. S. Motor prices ranged from 7.25 cents to 7.50 cents, a decline of 0.125 cent on the low of the range. There has been no spot business for several weeks but several suppliers believed that 7.25 cents could be done.

Low sulfur gas oil also was lower by 0.125 cent. High sulfur gas oil was offered at 3.50 cents a gallon, some of the trade reported.

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

U. S. MOTOR GASOLINE	Dec. 23	Dec. 16	Dec. 9
New York harbor	8.75	8.75	8.75
Portland district	*10.75	*10.75	*10.75
Boston district	*10.25	*10.25	*10.25
Providence district	*10.25	*10.25	*10.25
Philadelphia district	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
Baltimore district	9.00	9.00	9.00
Norfolk district	9.00	9.00	9.00
Charleston district	9.00	9.00	9.00
Savannah district	9.00	9.00	9.00
Jacksonville district	9.00	9.00	9.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	9.00	9.00	9.00
Philadelphia district	9.00	9.00	9.00
Baltimore district	9.00	9.00	9.00
WATER WHITE KEROSENE			
New York harbor	7.75	7.75	7.75
Philadelphia district	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
Baltimore district	7.75	7.75	7.75
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Boston district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
GRADE C BUNKER OIL†			
New York Harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10
MEDICINAL OILS, RUSSIAN			
.885-890 s.g. 320-330 vis.	$0.82 –$0.97	$0.82 –$0.97	$0.82 –$0.97
.870-875 s.g. 145-155 vis.	$0.74 –$0.89	$0.74 –$0.89	$0.74 –$0.89

Note: Above gasoline prices do not include inspection tax levied in some states.
*Minimum delivered. †Lighterage 5c per bbl. additional.

New York Export Market

(Lubricating oils are per gal. in bbls.)

	Dec. 23	Dec. 16	Dec. 9
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	51.00 –53.00	51.00 –53.00	51.00 –53.00
600 D filtered	44.00 –46.00	44.00 –46.00	44.00 –45.00
600 Warren E filtered	38.00 –41.00	38.00 –41.00	38.00 –41.00
600 s.r. unfiltered	32.50 –34.00	32.50 –34.00	33.00 –35.00
650 s.r. unfiltered	37.50 –40.00	37.50 –40.00	38.00 –40.00
600 flash, s.r.	40.00 –42.00	40.00 –42.00	40.00 –42.00
630 flash, s.r.	42.50 –45.00	42.50 –45.00	43.00 –46.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00 –21.00	20.00 –21.00	20.00 –21.00
250 vis. No. 6 color	18.00 –20.00	18.00 –20.00	18.00 –20.00
200 vis. No. 6 color	16.00 –17.00	16.00 –17.00	16.00 –17.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	22.00 –24.00	22.00 –24.00	22.00 –24.00
180 vis. No. 3¼ color	18.00 –20.00	18.00 –20.00	18.00 –20.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00 –32.00	30.00 –32.00	30.00 –32.00
500 vis. No. 6½ color	28.00 –29.00	28.00 –29.00	28.00 –29.00
400 vis. No. 7¼ color	26.00 –27.00	26.00 –27.00	26.00 –27.00
300 vis. No. 6 color	23.00 –24.00	23.00 –24.00	23.00 –24.00
200 vis. No. 6 color	21.00 –22.00	21.00 –22.00	21.00 –22.00
MEDICINAL OILS			
.875-880 s.g.	$0.76 –$0.91	$0.76 –$0.91	$0.76 –$0.91
.860-.865 s.g.	$0.58 –$0.73	$0.58 –$0.73	$0.58 –$0.73
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	3.125	3.125	3.00 – 3.125
124-126 A.m.p.	3.125	3.125	3.00 – 3.125
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.00 – 4.125	4.00 – 4.125	4.125– 4.25
125-127 A.m.p.	4.00 – 4.25	4.00 – 4.25	4.25 – 4.375
128-130 A.m.p.	4.25 – 4.50	4.25 – 4.50	4.50 – 4.625
130-132 A.m.p.	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
133-135 A.m.p.	5.50 – 5.75	5.50 – 5.75	5.75 – 6.00
135-137 A.m.p.	6.125– 6.375	6.125– 6.375	6.25 – 6.375
YELLOW CRUDE SCALE			
124-126 A.m.p.	3.00 – 3.125	3.00 – 3.125	3.00

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

GASOLINE	Dec. 23	Dec. 16	Dec. 9
U. S. Motor	8.50	8.50	8.50
60-62, 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.85	$1.85	$1.85
64-66, cases (cargoes)	$2.00	$2.00	$2.00
KEROSENE			
44 water white	8.00	8.00	8.00
41-43 prime white	7.00	7.00	7.00
Water white, cases (cargoes)	$1.80	$1.80	$1.80
Prime white, cases (cargoes)	$1.70	$1.70	$1.70
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	4.00	4.00	4.00
*30 plus translucent gas oil	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
Grade C bunker oil	$0.95	$0.95	$0.95
Grade C bunker oil, cargoes	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
*Less than ½ of 1% sulphur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.70 –$0.80	$0.65 –$0.70	$0.65 –$0.65
Grade C bunker oil for bunkering purposes, taxes paid	$0.95 –$1.00	$0.90 –$0.95	$0.90 –$0.95
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0. Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
200 vis. No. 3 unfiltered pale	8.25 – 9.00	8.25 – 9.00	8.25 – 9.00
300 vis. No. 3 unfiltered pale	9.75 –10.00	9.75 –10.00	9.75 –10.00
500 vis. No. 3½ unfiltered pale	11.25 –11.50	11.25 –11.50	11.25 –11.50
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
1200 vis. No. 5 unfiltered pale	16.25 –16.50	16.25 –16.50	16.25 –16.50
200 vis. No. 5-6 red oil	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
300 vis. No. 5-6 red oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
500 vis. No. 5-6 red oil	9.25 –10.00	9.25 –10.00	9.25 –10.00
750 vis. No. 5-6 red oil	11.00 –12.00	11.00 –12.00	11.00 –12.00
1200 vis. No. 5-6 red oil	15.00 –16.00	15.00 –16.00	15.00 –16.00

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	Dec. 23	Dec. 16	Dec. 9
U. S. Motor gasoline	7.25 – 7.50	7.375– 7.50	7.50
41-43 w.w. kerosene	6.375– 6.50	6.375– 6.50	6.375– 6.50
*26-32 translucent gas oil	3.875– 4.125	4.00 – 4.125	4.00 – 4.125
*Less than ½ of 1% sulphur.			

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Dec. 23	Dec. 16	Dec. 9
Gasoline, U. S. Motor, 53-55 Gravity	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00
Gasoline, U. S. Motor-blends and special cuts	7.25 –10.00	7.25 –10.00	7.25 –10.00
Gas Oil, 30-34, per barrel	$0.85 –$1.00	$0.80 –$1.00	$0.85 –$1.00
Diesel Oil, 27 plus, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Bunker oil, 14-18, per barrel	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125, 150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Dec. 23 Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	31-33	42-43
Gulf to U. K. or Continental ports*	22-23	31
North Atlantic to U. K. or Continental ports*	20-21	28/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.90-$0.95	$0.90
Gulf to North Atlantic ports (not E. of N. Y.)**	30–38	32-35

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.
**Venezuela loading same rate. For Tampico 3c per bbl. additional.

REPCAL METAPUMP
Metered Gear Grease Dispenser

Complies with Specifications and Tolerances adopted by National Conference on Weights and Measures

MODEL No. 25
Complete as Shown

$11.75

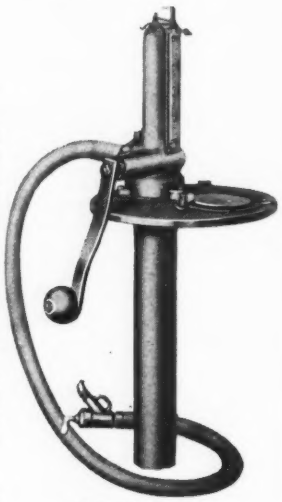
F. O. B. Los Angeles

A new invention of an accurate metered pump that cannot by-pass. Requires but one initial priming.

Safeguard your future equipment investment against OBSOLESCENCE.

A confidence builder with the grease buyer and a time saver for the operator.

Special discounts to the oil companies in quantities.



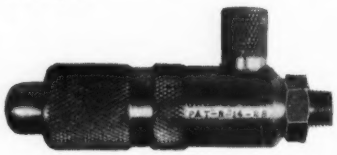
MODEL No. 100
Fits 100 lb. Grease Drum

SHIPPING Weight
Both Models 27 lbs.

REPCAL GREASE RAM

For opening frozen lubricating connections, develops 90,000 lbs. pressure under 100 lb. hammer blow. Saves operator's time—saves expensive hose breakage—guarantees 100% lubrication job.

Set includes one complete ram, also right angle and ¼-inch connections.



Price Complete

$3.25

F. O. B. Los Angeles

Threaded connections are replaceable. Piston is protected by steel piston pad. Adapter permits use of ram as grease nozzle.

Write for particulars

Attractive proposition to Distributors

REPCAL BRASS MFG. CO.

Lubricating Equipment Division

2109-15 E. 27th St. **Los Angeles**

STEEL DRUM ACCESSORIES CORPORATION

Buffalo, New York

Specialists in Drum Faucets and Gates

Specify

the "BLUE" *Gate*

and our various types of *DRUM FAUCETS*

for all purposes.

We solicit your inquiries for detail information.

Wax Markets

Refined Wax Active; Scale Quiet

NEW YORK, Dec. 21.—The outstanding feature of wax markets the past week was the heavy movement of 125-127 fully refined to Mexico, both from New York and New Orleans. The exceptionally good demand from Mexico served to bolster prices of this particular grade while others declined.

Compared with a week ago, prices for all grades of wax were unchanged. Spot business on the majority of grades was quiet both at New York and the Gulf. As has been the case for several weeks past, numerous bids were received but they were generally lower than sellers were willing to accept.

According to reports believed accurate, the Mexican government Jan. 1 will advance the import duty on wax approximately 2 cents per pound which will make the total duty around 7 cents. Mexican buyers were making large purchases, the trade said, to increase their storage before the increase in duty became effective.

There was an unconfirmed report of 300 tons of 125-127 fully refined wax having been sold for prompt shipment to England. Prices at New York for this grade ranged from 4 to 4.25 cents. Most sellers at the Gulf were asking 4 cents flat although it was the opinion of several of the trade that this could be shaded with firm offer.

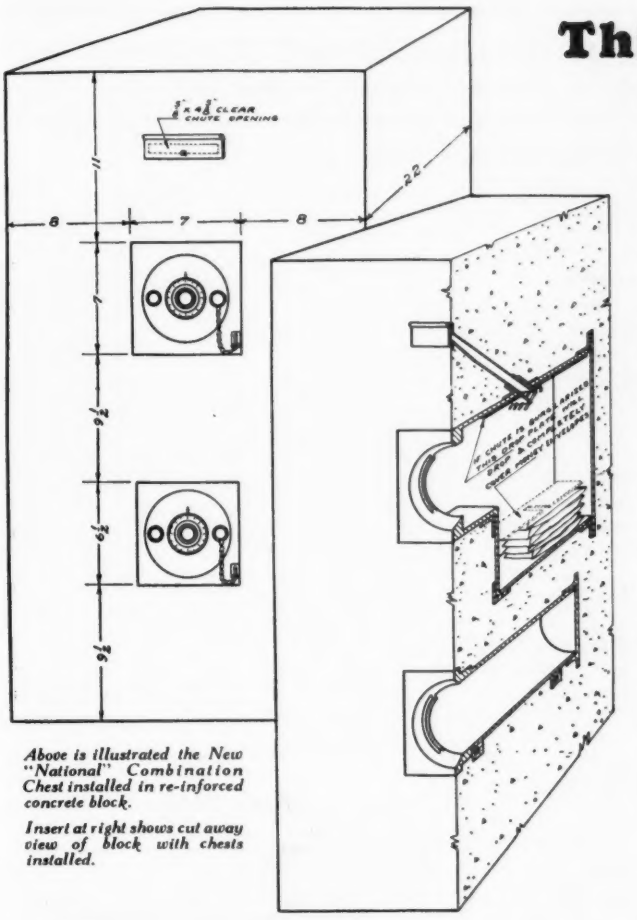
Other grades of fully refined, particularly those with higher melting points, were very quiet. This was accounted for by some of the trade through the fact that foreign refiners have been manufacturing more high melting point stuff the past few weeks and have taken some of the business which probably would have come to American refiners.

Sales of semi-refined goods have been made from the Gulf recently at prices which figure approximately 3.25 cents f.o.b. Oklahoma refineries. Considering freight, terminaling charges, etc., this would figure a trifle better than 3.50 cents, f.a.s. the Gulf. Demand for this commodity has been good but there has been relatively light movement due to the fact that a majority of refiners manufacturing semi-refined goods have been sold up, the trade reported.

Crude scale waxes were selling from 2.875 to 3.125 cents, depending on whether the movement was from the Gulf or New York. White crude scale was offered the past week at 3.125 cents, New York, and business was quiet. Gulf suppliers were quoting 3 cents although it was believed this figure might be shaded.

Yellow crude scale was quoted at 3 cents, New York, and 2.875 cents, New Orleans.

This New "National" Combination Chest furnishes night protection for attendant's change and holdup protection at all times for larger cash receipts.



Above is illustrated the New "National" Combination Chest installed in re-inforced concrete block.

Insert at right shows cut away view of block with chests installed.

The upper chest with envelope chute receives periodical deposits of the attendant, as funds not needed for change accumulate. Combination of this chest need not be known by attendant and a sign to that effect should be displayed prominently.

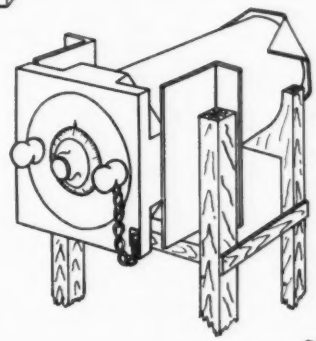
With only a small amount of change exposed to holdup attack, the risk is not worth while, even to the most desperate thug.

The lower chest is used by the attendant for overnight protection of current change. It is of the same type already installed by the Standard Oil of Indiana in nearly a thousand of their stations in Chicago, Milwaukee, Kansas City, St. Louis and Indianapolis—as well as in hundreds of independent chain stations.

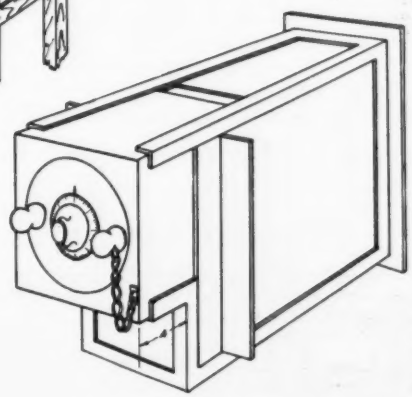
Months were spent designing this chest to not only withstand any form of attack, but to make repair cost trivial. Before purchasing these chests the Standard Oil Co. submitted them to every form of destructive test in their laboratories. Many attacks have already been successfully resisted since installation.

Read these Six Features—Then Act

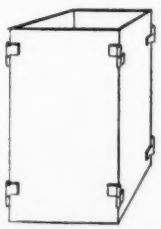
1. Absolute protection at small cost.
2. Removable dial discourages sledging.
3. Yale lock with special graduated spindle flush with door.
4. Immediate access after attack without services of expert.
5. Repair parts at trivial cost.
6. Eliminates the necessity of high priced insurance.



At left is shown regular "National" Chest which is installed in lower part of concrete block.



At the left is the "National" Chest with envelope chute which is installed in upper part of block.



This collapsible steel form for moulding concrete blocks is furnished with all quantity orders for "National" Combination Chests.

Protection for $37.50 up

ESTABLISHED 1883—44 YEARS AGO

THE NATIONAL SAFE AND LOCK COMPANY

GENERAL OFFICES—2345 EAST 69th STREET
WORKS—EAST 69th to 70th ST. AND PENNSYLVANIA R. R.

CLEVELAND, U. S. A.

THE NATIONAL SAFE & LOCK CO.
2345 East 69th St., Cleveland, Ohio

☐ Please send me further information on the protection offered by National Combination Chests.

Name.....

Address.....

City..... State.....

Tank Wagon Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t. w. and s. s. markets for a whole year, arranged for quick reference)

These Prices in Effect Dec. 23, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	14	2	16	18	13
Newark, N. J.	15	2	17	19	13
Annapolis, Md.	15	4	19	21	13
Baltimore, Md.	15	4	19	21	12
Cumberland, Md.	16	4	20	22	13
Washington, D C.	15	2	17	19	12
Danville, Va.	16	5	21	23	12
Norfolk, Va.	15	5	20	22	12
Richmond, Va.	15	5	20	22	13
Roanoke, Va.	16	5	21	23	13
Petersburg, Va.	16	5	21	23	13
Charleston, W. Va.	15	4	19	21	13
Keyser, W. Va.	16	4	20	22	13
Parkersburg, W. Va.	15	4	19	21	12
Wheeling, W. Va.	16	4	20	22	13
Charlotte, N. C.	12	5	17	19	13
Hickory, N. C.	16	5	21	23	13
Mt. Airy, N. C.	16	5	21	23	13
Salisbury, N. C.	14	5	19	21	13
Charleston, S. C.	15	6	21	23	13
Columbia, S. C.	16	6	22	24	13

Note: 2c per gallon discount off t.w. price of gasoline to dealers and commercial consumers thru S. O. New Jersey territory.

CONTINENTAL OIL

Denver, Colo.	14	4	18	21	15.5
Pueblo, Colo.	14	4	18	21	15.5
Grand Junc., Colo.	18.5	4	22.5	25.5	19
Casper, Wyo.	15	4	19	22	14
Cheyenne, Wyo.	16.5	4	20.5	23.5	15.5
Butte, Mont.	20.5	5	25.5	28.5	20
Helena, Mont.	20.5	5	25.5	28.5	20
Salt Lake City, Utah	17.5	3½	21	24	17
Boise, Ida.	19.5	4	23.5	26.5	19
Twin Falls, Ida.	19.5	4	23.5	27.5	19
Albuquerque, N. M.	15	5	20	22	17

S. O. CALIFORNIA

Phoenix, Ariz.	14	4	18	22	20
Los Angeles, Cal.	16.5	3	19.5	22.5	15.5
Fresno, Cal.	17	3	20	23	17
San Francisco, Cal.	17	3	20	23	15.5
Reno, Nev.	21	4	25	28	19
Portland, Ore.	17.5	3	20.5	23.5	16.5
Seattle, Wash.	17.5	3	20.5	23.5	16.5
Spokane, Wash.	21.5	3	24.5	27.5	20.5
Tacoma, Wash.	17.5	3	20.5	23.5	16.5

Note: 4c per gal. discount to dealers off t.w. price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only.

S. O. LOUISIANA

Little Rock, Ark.	14	5	19	21	13
Alexandria, La.	‡15	4	‡19	21	†16
Baton Rouge, La.	12	4	16	18	†14.5
Lake Charles, La.	††16.5	4	††20.5	††22.5	†16
New Orleans, La.	*11	4	*15	15	†13
Shreveport, La.	13.5	4	17.5	19.5	†15
Lafayette, La.	**16	4	**20	**22	†14
Bristol, Tenn.	16	5	21	22	14
Chattanooga, Tenn.	15	5	20	22	14
Knoxville, Tenn.	15	5	20	22	16
Nashville, Tenn.	14	5	19	19	16
Memphis, Tenn.	13	5	18	20	12.5

Note: 2c per gallon discount off t.w. price of gasoline to dealers thru S. O. Louisiana territory.

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

‡Alexandria gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	15	5	20	21	15.5
Catlettsburg, Ky.	15	5	20	21	15.5
Lexington, Ky.	15	5	20	22	15.5

Latest Changes in Tank Wagon Prices

Gasoline Changes

S. O. Louisiana—T.w. and s.s. gasoline cut 2c, Shreveport, to 17.5c and 19.5c, **Dec. 16.**

Continental Oil—S.s. price only up 3c, Salt Lake City, to 24c, **Dec. 13.**

T.w. and s.s. cut 1c, through Colorado and Wyoming, with some exceptions, **Dec. 18.**

Points excepted in this change were Denver, Pueblo and Grand Junction, Col., all of which were unchanged. Cheyenne was cut only ½c.

Magnolia Petroleum—T.w. up 2c, s.s. 1c, Muskogee, to 18c and 20c respectively, and t.w. and s.s. up 2c, Houston, to 15c and 19c, **Dec. 19.**

T.w. and s.s. cut 1c, Little Rock, to 18c and 20c respectively, Little Rock, **Dec. 21.**

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Louisville, Ky.	16	5	21	23	13
Covington, Ky.	15	5	20	21	15.5
Clarksdale, Miss.	13	5	18	20	12.5
Gulfport, Miss.††	17.5	5	22.5	24.5	14
Jackson, Miss.	14	5	19	21	13
Natchez, Miss.	15.5	5	20.5	20.5	14
Vicksburg, Miss.	15.5	5	20.5	22.5	14
Birmingham, Ala.	13	4	17	19	13
Mobile, Ala.‡	14	4	18	20	15
Montgomery, Ala.*	15	4	19	21	16.5
Atlanta, Ga.	14	6	20	22	†16.5
Augusta, Ga.	12	6	18	20	†15.5
Macon, Ga.	15	6	21	23	†16.5
Savannah, Ga.	16	6	22	24	†15.5
Jacksonville, Fla.	16	6	22	24	14.5
Miami, Fla.	17	6	23	25	15.5
Tampa, Fla.	14	6	20	22	14.5
Pensacola, Fla.**	12	6	18	20	14.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. NEBRASKA

Omaha, Neb.	16.25	4	20.25	22.25	13.25
McCook	17.75	4	21.75	23.75	14.75
Norfolk	16.75	4	20.75	22.75	13.75
North Platte	17.75	4	21.75	23.75	14.50
Scottsbluff	17.75	4	21.75	23.75	14.25

S. O. INDIANA

Chicago, Ill.	14	3	17	18	13
Decatur, Ill.	16.2	3	19.2	20.2	13.1
E. St. Louis, Ill.	12.4	3	15.4	15.4	12.2
Joliet, Ill.	16.4	3	19.4	20.4	13.3
Peoria, Ill.	16.2	3	19.2	20.2	13.1
Quincy, Ill.	16.2	3	19.2	20.2	12.9
Indianapolis, Ind.	16.2	4	20.2	21.2	14.2
Evansville, Ind.	16	4	20	21	14
South Bend, Ind.	16.4	4	20.4	21.4	14.4
Detroit, Mich.	16.8	3	19.8	20.8	14.7
Grand Rapids, Mich.	16.7	3	19.7	20.7	14.6
Saginaw, Mich.	16.9	3	19.9	20.9	14.8

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Green Bay, Wisc.	16.6	2	18.6	19.6	13.4
Madison, Wisc.	16.3	2	18.3	19.3	13.1
Milwaukee, Wisc.	16.1	2	18.1	19.1	12.9
La Cross, Wisc.	17.2	2	19.2	20.2	14
Minneapolis, Minn.	17.2	3	20.2	21.2	13.9
Duluth, Minn.	17.5	3	20.5	21.5	13.9
Mankato, Minn.	17.1	3	20.1	21.1	13.7
Des Moines, Ia.	16.5	3	19.5	20.5	13.3
Davenport, Ia.	16.5	3	19.5	20.5	13.3
Sioux City, Ia.	16.1	3	19.1	20.1	12.9
Mason City, Ia.	16.5	3	19.5	20.5	13.3
St. Louis, Mo.	*15.9	2	17.9	18.9	12.3
Kansas City, Mo.	†16.9	2	18.9	19.9	11.6
St. Joseph, Mo.	†16.5	2	18.5	19.5	12.2
Fargo, N. D.	18.9	3	21.9	22.9	15.9
Grand Forks, N. D.	19.2	3	22.2	23.2	16.2
Minot, N. D.	18.9	3	21.9	22.9	15.9
Pierre, S. D.	17	4	21	22	14.4
Huron, S. D.	17.3	4	21.3	22.3	14.7
Wichita, Kans.	14.8	3	17.8	18.8	11.8
Bartlesville, Okla.	14.5	4	18.5	19.5	11.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply. Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c

†Includes city tax of 1c.

S. O. OHIO

Ohio state-wide.	14	4	18	19	12
Columbiana, Meigs, Washington, Mercer, Stark, Gallia, Darke and Hancock Counties:	13	4	17	17	12

Note: Discount to dealers and commercial accounts generally thru Ohio is 2c per gal. off t.w. price with some exceptions. In 8 counties mentioned above, discount is 3c per gal. off t.w. price.

MAGNOLIA PETROLEUM

Muskogee, Okla.	14	4	18	20	10
Oklahoma City.	13	4	17	20	10
Tulsa, Okla.	11	4	15	19	10
Fort Smith, Ark.†	11	†4	15	17	12
Little Rock, Ark.	13	5	18	20	13
Texarkana, Ark.*	13	*4	17	19	12
Dallas, Tex.	13	4	17	21	12
Fort Worth, Tex.	13	4	17	20	12
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	11	4	15	19	11
El Paso, Tex.	12	4	16	20	16

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings.	14	2	16	18	15
Borough of Richmond.	15	2	17	19	15
Albany, N. Y.	16	2	18	20	15
Buffalo, N. Y.	14	2	16	18	14
Rochester, N. Y.	14	2	16	18	13
Syracuse, N. Y.	16	2	18	20	15
Boston, Mass.	16	2	18	20	15
Augusta, Me.	16	4	20	20	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	16	4	20	22	15

Note: S. O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices.

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York selling Socony gasoline.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Florida, 1/8c on both; Georgia, 1/10c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only, per gallon; Iowa, 7/100c; Michigan 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above state or other states there are local inspection fees.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect Dec. 23, 1929

ATLANTIC REFINING

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Pittsburgh, Pa.	15	*	15	21	13
Philadelphia, Pa.	15	*	15	21	13
Allentown, Pa.	15	*	15	21	13
Erie, Pa.	15	*	15	19	13
Scranton, Pa.	15	*	15	21	13
Altoona, Pa.	15	*	15	21	13
Williamsport, Pa.	14	*	14	18	13
Dover, Del.	15	3	18	20	13
Wilmington, Del.	15	3	18	20	13
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	16	2	18	20	15
Worcester, Mass.	16	2	18	20	15
Fall River, Mass.	16	2	18	20	13
Providence, R. I.	16	2	18	20	13
Hartford, Conn.	16	2	18	20	15
New Haven, Conn.	16	2	18	20	15
Atlantic City, N. J.	14	2	16	18	13
Camden, N. J.	15	2	17	19	13
Trenton, N. J.	15	2	17	19	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	15	4	19	21	12
Hagerstown, Md.	14	4	18	18	12
Richmond, Va.	15	5	20	22	13
Wilmington, N. C.	15	5	20	22	13
Brunswick, Ga.	16	6	22	24	**16.5
Jacksonville, Fla.	16	6	22	24	14.5

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics.

*4-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.7	17
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**19.7	**21.2	*23
St. Louis	15.6	17.1	18.9
New York		16	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)

New York harbor	11.50–12.00
Philadelphia district	11.50–12.00

Tank Wagon or Steel Barrels

New York City	16–18
New England	18–19
New Jersey	16–18
Pennsylvania	16–19

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

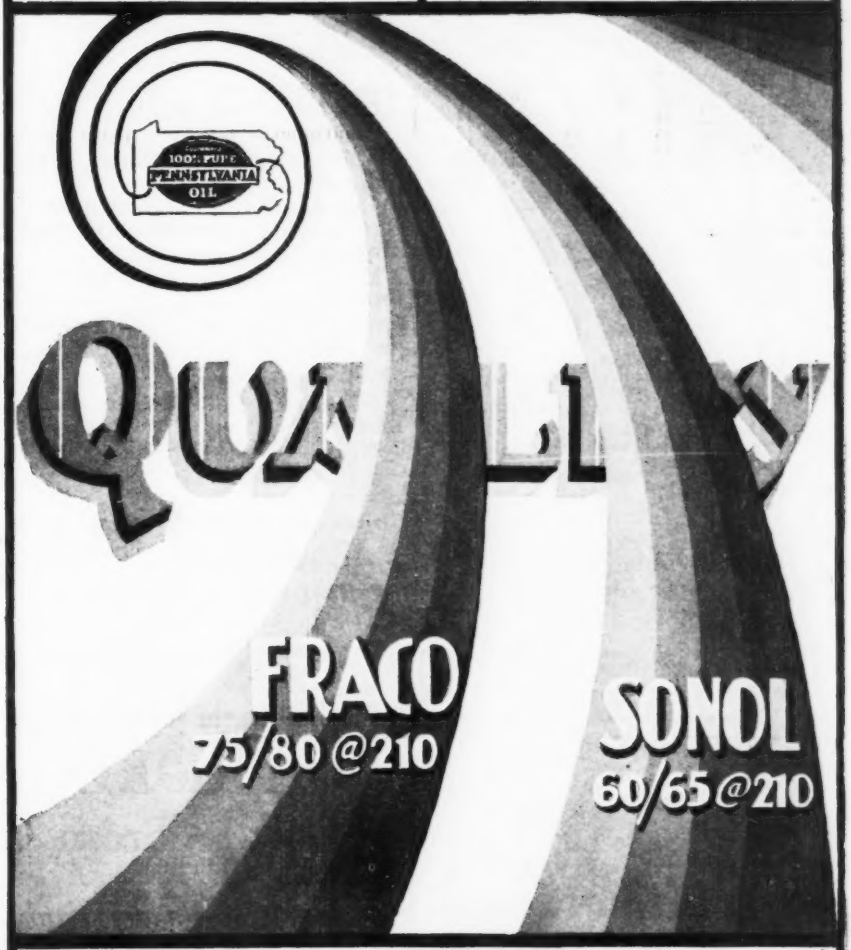
(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
ONTARIO					
Toronto	19.5	5	24.5	28	20.5
Ottawa	19.5	5	24.5	28	20.5
Cochrane	24.5	5	29.5	..	25.5
Ft. William	22.5	5	27.5	31	22.5
Border Cities, including Windsor	18.5	5	23.5	27	19.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	26	3	29	33	26
ALBERTA					
Edmonton	27.5	5	32.5	36	27.5
Calgary	23.5	5	28.5	32	23.5
BRITISH COLUMBIA					
Vancouver	23	3	26	30	24
QUEBEC					
Montreal	20.5	5	25.5	29	21.5
Quebec City	21.5	5	26.5	30	22.5
Three Rivers	21.5	5	26.5	30	22.5
NEW BRUNSWICK					
St. John	22	5	27	31	24
Moncton	22	5	27	31	24
NOVA SCOTIA					
Halifax	22	5	27	31	24
Sydney	22	5	27	31	24
PRINCE EDWARD ISLAND					
Charlottetown	22	5	27	31	24

Note: In districts surrounding these points 1c additional is added to city price.

REFINING SCIENCE MODERNIZED

FRANKLIN CREEK REFINERY AT FRANKLIN | DAUGHERTY REFINERY AT PETROLIA



100% PENNSYLVANIA OILS SHARPLES PROCESSED

ADDRESS COMMUNICATIONS TO
W.H. DAUGHERTY & SON REFINING CO.
114 FIFTH AVENUE, NEW YORK.

OIL TIGHT STORAGE

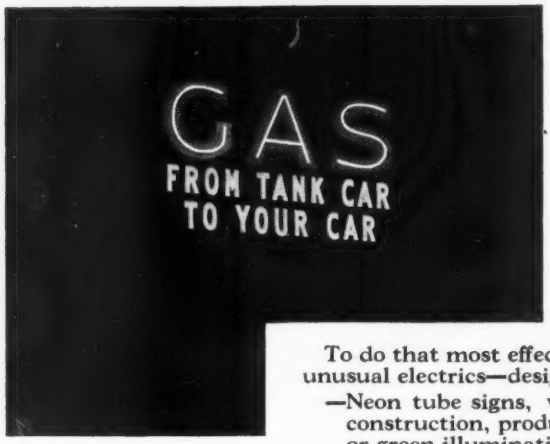
Reduces Gasoline Shrinkage

BROWN DOUBLE ELECTRIC WELDED TANKS ARE OIL TIGHT

Send us your inquiries

BROWN SHEET IRON & STEEL CO.

St. Paul Minnesota



"Gas" in brilliant red neon for attention power combined with Flexlume Oplex (raised glass) letters for striking day and night effect.

NECESSARY PROFIT EQUIPMENT

NEW customers won! . . . more profits made!! That's the experience of progressive marketers of gas and oil who, with a *distinctive* electric, impress their name and location upon the distant as well as the passing motorists.

To do that most effectively and at lowest cost, they choose unusual electrics—designed and built by Flexlume:

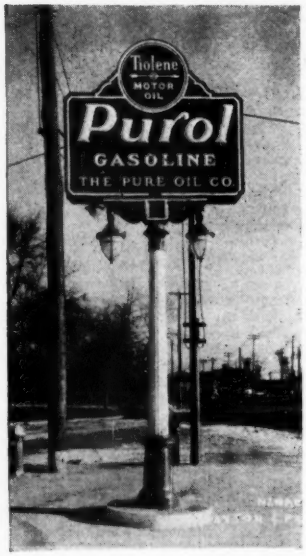
—Neon tube signs, with many exclusive features of construction, producing the most brilliant red, blue or green illumination and longest tube life.

—The famous Flexlume Op!ex (raised glass) letters, illuminated from within and giving greatest day and night effectiveness.

—Spectacular exposed lamp electrics, flashing for even greater effectiveness.

—Striking combinations of these different illuminations.

Our specialists in electric sign design will submit a color sketch, entirely free of charge, to meet your needs and requirements. Refer to "Flexlume" in your 'phone book or write FLEXLUME CORPORATION, 2071 Military Road, Buffalo, N. Y.

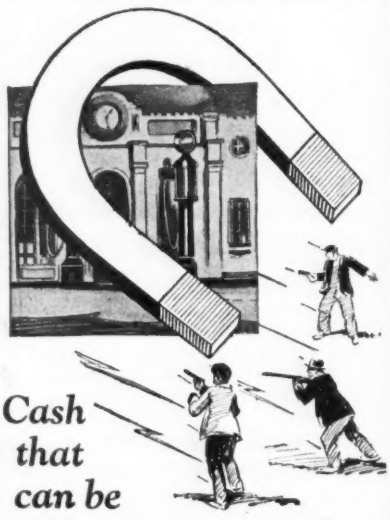


FLEXLUME

Factories at Buffalo, N. Y. and Toronto, Can.

FLEXLUME
ELECTRIC DISPLAYS

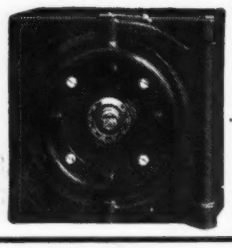
SALES AND SERVICE OFFICES IN CHIEF CITIES OF UNITED STATES AND CANADA



Cash that can be stolen is a magnet!

It draws the burglar and hold-up man just as irresistibly as the loadstone draws steel filings.

The York Burglary Chest—the result of nearly half a century in expert safe construction—will bring to your service station the protection needed.



York Safes

YORK SAFE *and* LOCK COMPANY
York, Pa.

PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes
For Domestic or Export

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
CYLINDER STOCKS
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PALE—RED OILS
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TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity—this Company enjoys an International Reputation

JAMES B. BERRY SONS' CO., INC.
General Office—Oil City, Pa.

District Offices at
New York, Philadelphia, Boston, Chicago
London—Hamburg

Cable Address—JASBER Oil City *All Codes*

Crude Oil Prices (in Effect Dec. 23, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(All Penna. Crude prices effective Oct. 1, 1929)

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District).....*$3.05
Bradford District Oil in National Transit Lines (Bradford District).....*3.05
Penna. Grade Oil in National Transit Lines (Other Pennsylvania).....*3.05
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)..... 3.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)..... 2.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)..... 2.70
Wayne district crude in Cumberland lines (West Virginia).....$1.42
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Dec. 6, 1929)..... 1.80
Corning, O., heavy grade (Effective Dec. 6, 1929) 1.70
Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective Nov. 12, 1929)..... 1.55
Somerset Oil in Eureka Pipe Lines (Effective Nov. 12, 1929)..... 1.29
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 29, 1929).....$0.60

***Oil run prior to July 1, 1929 is $3.00 per bbl.**

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Oct. 7, 1929)..... $1.70

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon):

32-32.9	$1.25	39-39.9	$1.60
33-33.9	1.30	40-40.9	1.65
34-34.9	1.35	41-41.9	1.70
35-35.9	1.40	42-42.9	1.75
36-36.9	1.45	43-43.9	1.80
37-37.9	1.50	44 and above	1.85
38-38.9	1.55		

(Posted by Pure Oil Co.)

Midland, Midland County.....$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.
Effective May 21, 1929

Wooster	$1.90	Princeton	$1.75
Lima	1.80	Illinois	1.75
Waterloo	1.20	Plymouth	1.28
Indiana	1.57	West Kentucky	1.68

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia.....$2.20
Oil Springs..... 2.27

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Pariric Oil & Gas Co.
(In Oklahoma, Kansas, North and East Central Texas)
Effective May 20, 1929

Below 25	$0.85	35-35.9	$1.40
25-25.9	0.90	36-36.9	1.45
26-26.9	0.95	37-37.9	1.50
27-27.9	1.00	38-38.9	1.55
28-28.9	1.05	39-39.9	1.60
29-29.9	1.10	40-40.9	1.65
30-30.9	1.15	41-41.9	1.70
31-31.9	1.20	42-42.9	1.75
32-32.9	1.25	43-43.9	1.80
33-33.9	1.30	44 and above	1.85
34-34.9	1.35		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

May 20, 1929, same schedule as Prairie in above fields.

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

May 20, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.70	29-29.9	0.95
26-26.9	0.75	30-30.9	1.05
27-27.9	0.85	31-31.9	1.15
28-28.9	0.90		

May 20, 1929, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in West Texas which see.

Iatan district.....$0.93
Corsicana heavy..... 0.80
Luling..... 0.90
Mirando..... 0.90

Carter Oil Co.

(Oklahoma and Kansas)

May 20, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.
Effective May 20, 1929

Hutchinson and Carson Counties:

Below 32	$0.90	38-38.9	$1.25
32-32.9	0.95	39-39.9	1.30
33-33.9	1.00	40-40.9	1.35
34-34.9	1.05	41-41.9	1.40
35-35.9	1.10	42-42.9	1.45
36-36.9	1.15	43-43.9	1.50
37-37.9	1.20	44 and above	1.55

Wheeler County:

Below 30	$0.90	37-37.9	$1.30
30-30.9	0.95	38-38.9	1.35
31-31.9	1.00	39-39.9	1.40
32-32.9	1.05	40-40.9	1.45
33-33.9	1.10	41-41.9	1.50
34-34.9	1.15	42-42.9	1.55
35-35.9	1.20	43-43.9	1.60
36-36.9	1.25	44 and above	1.65

Gray County:

Below 29	$0.90	37-37.9	$1.35
29-29.9	0.95	38-38.9	1.40
30-30.9	1.00	39-39.9	1.45
31-31.9	1.05	40-40.9	1.50
32-32.9	1.10	41-41.9	1.55
33-33.9	1.15	42-42.9	1.60
34-34.9	1.20	43-43.9	1.65
35-35.9	1.25	44 and above	1.70
36-36.9	1.30		

Above prices met by The Texas Co. and Magnolia on May 20.

WEST TEXAS

Humble Oil & Refining Co.
Effective May 20, 1929

Winkler, Crane, Upton, Crockett, and Pecos Counties, also Lea County, N. Mex.

Below 25	$0.70	31-31.9	0.98
25-25.9	$0.74	32-32.9	$1.02
26-26.9	$0.78	33-33.9	1.06
27-27.9	0.82	34-34.9	1.10
28-28.9	0.86	35-35.9	1.14
29-29.9	0.90	36 and above	1.18
30-30.9	0.94		

Howard and Glasscock counties:
Effective Nov. 27, 1929

Below 25	$0.70	31-31.9	$0.90
25-25.9	.74	32-32.9	.92
26-26.9	.78	33-33.9	.94
27-27.9	.82	34-34.9	.96
28-28.9	.84	35-35.9	.98
29-29.9	.86	36 and above	1.00
30-30.9	.88		

May 20, 1929, The Texas Co. posted same prices as Humble in Crane, Upton, Pecos and Winkler., and Magnolia in Crane, Upton, Winkler, Glasscock, Howard and Mitchell.

SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)
Effective May 20, 1929

Mirando.....$0.90
Salt Flat..... 1.25

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.
Effective May 22, 1929

Below 28	$1.00	36-36.9	$1.45
28-28.9	1.05	37-37.9	1.50
29-29.9	1.10	38-38.9	1.55
30-30.9	1.15	39-39.9	1.60
31-31.9	1.20	40-40.9	1.65
32-32.9	1.25	41-41.9	1.70
33-33.9	1.30	42-42.9	1.75
34-34.9	1.35	43-43.9	1.80
35-35.9	1.40	44 and above	1.85

**Cotton Valley, below 36, $0.85. Beginning with 36-36.9, same schedule as above.

Smackover, below 24.....$0.85
do 24 and above..... 1.00
Bellevue..... 1.30
*Urania, La..... 1.10
†East El Dorado..... 0.75

*Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.

May 20, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.55; 25-25.9, $0.90; 26-26.9, $0.95; 27-27.9, $1.00.

May 22, Magnolia, Atlantic, Shreveport-Eldorado Pipe Line, Louisiana Oil, and Gulf Companies met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.
Effective May 22, 1929

Below 28	$0.90	30-30.9	$1.02
28-28.9	0.94	31-31.9	1.06
29-29.9	0.98	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.
Effective May 20, 1929

Grades A	$1.30	29-29.9	$1.30
Grades B:		30-30.9	1.33
Below 25	$1.15	31-31.9	1.36
25-25.9	1.18	32-32.9	1.39
26-26.9	1.21	33-33.9	1.42
27-27.9	1.24	34-34.9	1.45
28-28.9	1.27	35 and above	1.48

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

Burford Moves Sales Offices to Tulsa

CLEVELAND, Dec. 23.—General sales offices of the Burford Oil Co. are being transferred to Tulsa from Pecos, West Texas, according to F. W. Burford, president. The new offices will be opened on the third floor of the Tulsa Trust Bldg. Jan. 1.

General accounting and traffic offices will remain at the refinery at Pecos. It is understood that after about Feb. 1, Mr. Burford will move his personal headquarters to Tulsa also.

E. F. Griswold, sales manager, and his clerical staff are expected to arrive in Tulsa Dec. 30. The branch sales office in Minneapolis and the special sales representatives in Illinois, Wisconsin, Iowa and Nebraska will report to the Tulsa offices after the first of the year.

The Burford Oil Co. operates a modern 6000 barrel skimming and cracking plant at Pecos. It draws its crude by pipe line from the Winkler county field. The company specializes in the production of anti-knock gasolines, of which it has a daily output of 150,000 gallons.

Most of the company's output is sold in northern states, and the management feels that Tulsa offices will be valuable in keeping in touch with the general market as well as with the salesmen on the road.

W. B. Reynolds Dies

NEW YORK, Dec. 20.—W. B. Reynolds, manager of the Albany district of the Standard Oil Co. of New York, died Dec. 8 at Albany. He was 51 years old. He had been ill since February. Mr. Reynolds entered the employ of the Standard in 1902 at Middletown, N. Y., and was appointed division manager at Utica in 1910. He was transferred to Syracuse as division manager in 1914 and was appointed district manager at Albany last March.

ROCKAWAY, N. J.—Clinton S. Darling has been appointed assistant to Col. Guilford C. Babcock, president of 4-One Box Machine Makers here. That company is the licensing company for the manufacture and sale of 4-One wirebound boxes, made by many box makers over the country and used in various industries where containers of light weight, strength, flexibility and moderate cost are required.

55 gallon oil drum

by

the STEEL CONTAINER *Specialists*

BENETCO desires to assist the American Petroleum Industry in its campaign against waste and duplication by supplying the perfect product . . . steel barrels and shipping cans . . . that will service the industry most economically and efficiently.

WILSON & BENNETT MFG. CO.

6520 S. Menard Ave.
CHICAGO

39 Cortlandt St.
NEW YORK

Sales representatives in principal cities

Crude Oil Prices (in Effect Dec. 23, 1929)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective May 20, 1929

Grades A	$1.30	*Grades B	$1.15
‡Grades B (light crude):			
35–35.9	$1.49	40–40.9	$1.69
36–36.9	1.53	41–41.9	1.73
37–37.9	1.57	42–42.9	1.77
38–38.9	1.61	43–43.9	1.81
39–39.9	1.65	44 and above	1.85

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective May 20, 1929)

‡Salt Creek 29–29.9	$1.10
" " 30–30.9	1.15
" " 31–31.9	1.20
" " 32–32.9	1.25
" " 33–33.9	1.30
" " 34–34.9	1.35
" " 35–35.9	1.40
" " 36–36.9	1.45
" " 37 and above	1.50
Elk Basin	1.65
Grass Creek light	1.65
Bid Muddy	$1.43
Lance Creek	1.68
Rock Creek	1.40
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.65
‡Cat Creek, Mont	1.65
Sunburst, Mont	1.75
‡Hogback, N. Mex	1.70
Artesia, N. Mex	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Alamitos Heights Huntington Beach Signal Hill Seal Beach	Inglewood Torrance	Olinda-Brea Canon †Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14–14.9	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	.....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70		$ .65	$ .70
15–15.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
16–16.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
17–17.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
18–18.9	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.75
19–19.9	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.80
20–20.9	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.85
21–21.9	.89	.89	.89	....	....	.88	.88	.89	....	.74	.74	.74	.74	.85	55°	.86	.86
22–22.9	.93	.93	.93	....	....	.91	.91	.92	....	.80	.80	.80	.80	.90	gravity	.87	.87
23–23.9	.97	.97	.97	....	....	....	.94	.95	....	.85	.85	.85	.85	.95	and	.90	.90
24–24.9	1.01	1.01	1.01	1.01	....	....	.97	.98	....	.90	.90	.88	.88	.98	over	.94	.94
25–25.9	1.05	1.05	1.05	1.05	....	....	1.00	1.01	....	.95	.95	.91	.91	1.01	....	.98	.98
26–26.9	1.09	1.09	1.09	1.09	....	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	....	1.02	1.02
27–27.9	1.13	1.13	1.13	1.13	....	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	....	1.06
28–28.9	1.17	1.17	1.17	1.17	....	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	....	1.10
29–29.9	1.21	....	1.21	1.21	....	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	....	....	1.14
30–30.9	1.25	....	1.25	1.25	....	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	....	1.18
31–31.9	1.30	....	1.30	1.30	....	....	....	1.25	....	1.28	1.28	1.14	....	....	....	....	1.23
32–32.9	1.35	....	....	1.35	....	....	....	1.30	....	1.34	1.34	1.18	....	....	....	....	1.28
33–33.9	....	....	....	1.41	....	....	....	1.35	....	1.40	1.40	1.22	....	....	....	....	1.34
34–34.9	....	....	....	1.47	$1.16	....	....	1.40	....	....	1.46	1.26	....	....	....	....	....
35–35.9	....	....	....	1.53	1.22	....	....	1.45	....	....	1.52	1.30	....	....	....	....	....
36–36.9	....	....	....	1.59	1.28	....	....	1.50	....	....	....	....	....	....	....	....	....
37–37.9	....	....	....	1.65	1.34	....	....	1.55	....	....	....	....	....	....	....	....	....
38–38.9	....	....	....	1.71	1.40	....	....	1.60	....	....	....	....	....	....	....	....	....
39–39.9	....	....	....	1.77	1.46	....	....	1.65	....	....	....	....	....	....	....	....	....
40–40.9	....	....	....	1.83	1.52	....	....	....	....	....	....	....	....	....	....	....	....
41–41.9	....	....	....	1.89	1.58	....	....	....	....	....	....	....	....	....	....	....	....
42–42.9	....	....	....	1.95	1.64	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except it does not post prices in Wheeler Ridge, Whittier, La Habra, Newhall and Kettleman Hills. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Richfield posted only to 30-30.9 at $1.25.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Dec. 23	Dec. 16
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, cwt.	$0.80	$0.80
Sal Soda wks	$1.00–1.05	$1.00–1.05
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10–4.00	$3.10–4.00
Liquid Chlorine, tank cars, wks, lb.	3.50–5.00	3.50–5.00

Compounders' Supplies

	Dec. 23	Dec. 16
Vegetable Oils		
Linseed carloads, spot, lb.	14.90	14.90
Tanks, spot	14.10	14.10
Soya Bean, Tanks, coast, lb.	10.50-11.00	10.50-11.00
Oleic Acid		
Distilled, tanks, lb.	9.75	9.75
Distilled, bbls, lb.	10.625	10.625
Saponified, tanks, lb.	9.75	9.75
Saponified, bbls, lb.	10.625	10.625
Lard Oils		
Prime Winter Strained, lb.	15.25	15.25
Extra Winter Strained, lb.	12.75	12.75
Extra, lb.	12.50	12.50
Extra No. 1, lb.	12.00	12.00
No. 1, lb.	11.75	11.75
No. 2, lb.	11.50	11.50
Tallow oil, lb.	11.00	11.00
Neatsfoot Oil		
Pure, bbls, lb.	14.50	14.50
Extra, bbls, lb.	12.25	12.25
No. 1 bbls, lb.	12.00	12.00
Cold Pressed, lb.	12.50	12.50
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	70	70
Light Pressed, tank cars, N. Y., gal.	58–60	58–60
White bleached, gal.	78	78
Yellow bleached, gal.	71	71
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam, distilled turpentine, N. Y., gal.	51	51
Steam distilled turpentine, Savannah, gal.	46	46
Gum turpentine, N. Y., gal.	55	55
Gum turpentine, f.o.b. cars Savannah, gal.	49.25	49.25
Wood Rosin F, N. Y., gal.	$7.30	$7.30
Wood Rosin F, Savn'h, bbl.	$6.50	$6.50
Gum Rosin B, N. Y., bbl.	$8.00	$8.00
Gum Rosin B, f.o.b. cars Savannah, bbl.	$7.30	$7.30
Rosin oil, pure, gal.	58	58
Rosin oil, compounded, gal.	47	47
Pine Tar		
Kiln burnt, bbl.	$13.00–14.00	$13.00–14.00
Retort, bbl.	$13.50–14.50	$13.50–14.50
Alcohol		
Denatured Formula 5, in bbls., per gal	59–66	59–66

The 750-gallon truck of White Star Motor Oil Co. used in hauling motor oil. Walter Drompp, secretary of the company, is standing at the right

Saves 10c Gallon Hauling Oil by Truck

LOGANSPORT, Ind. ABOUT 10 cents a gallon is saved in the handling of motor oil by tank truck from the bulk plant here of the White Star Motor Oil Co. Walter Drompp, secretary of the company, estimates this savings through elimination of cost of drums and of less than car load shipments of oil.

The company has a 750 gallon truck for hauling oil. To heat the oil for winter hauling the engine exhaust pipe passes through the comparts and back to the front.

The truck operates from the Logansport bulk plant were motor oil is received in tank car lots. Nine bulk plants within a radius of 50 miles of Logansport are supplied by the truck, which also services all company owned and all dealer stations in this territory.

At these nine bulk plants the oil is drawn off in small containers for servicing the farmer accounts.

The White Star company has been distributing motor oil by truck for the past 10 years. The truck is kept in good condition for its advertising value.

Old-Timers! Another Claim On First Drive-In

CLEVELAND, Dec. 19.—The question as to who was the first one to open a drive-in filling station for automobiles bobs up every now and then. Impetus to that question is given again with the claim of the Standard Oil Co. of Ohio in the December issue of "The Sohioan," company publication, that as far back as 1910, it had erected a drive-in station at Columbus, O. at the corner of Oak and Young streets.

NATIONAL PETROLEUM NEWS in its May, 1910 issue declares that what is believed to be the first drive-in station was opened around that time in St. Louis by the Automobile Gasoline Co., of which C. H. Laessig was president. Other claimants to this pioneering included the Brooks Oil Co., Cleveland, and another oil company in Detroit.

D. F. Wadley, widely known West Texas marketer, represents the Mid-Continent Petroleum Corp., Tulsa, at Lubbock. He is an active worker in the affairs of the Texas Petroleum Marketers Association

In 1913 the Standard Gas Station Co., which was the Standard Oil Co. of Ohio, began building drive-in stations in Ohio. That year the National Supply Station Co., which turned out to be none other than the Standard of California, also opened its first drive-in station in Los Angeles.

The lot on which the Standard's station at Columbus was erected was leased at $16.00 per month, and the entire station cost did not exceed $1000. Three years later, the station had proven its worth, and on the same site a portable steel structure was erected. The building was 20 by 14 feet, and had double doors at the front and back of the building. Canopies and spacious driveways were still unknown and the customer drove in one door, going through the station building, and out the other door.

Between 300 to 400 gallons of gasoline were sold from this station daily in 1913, and on one Saturday, shortly after the opening, 1800 gallons were sold, according to the publication.

Guatemala imported 150,000 pounds of its total of 160,000 pounds of greases in 1928 from the United States. We also furnished that country with 2,990,000 pounds of paraffin wax, out of its total imports of 3,031,000 pounds.

France exported 12,000 barrels of gasoline to French Morocco in 1928, compared with 192,000 barrels exported by the United States.

Skilled Supervision

Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

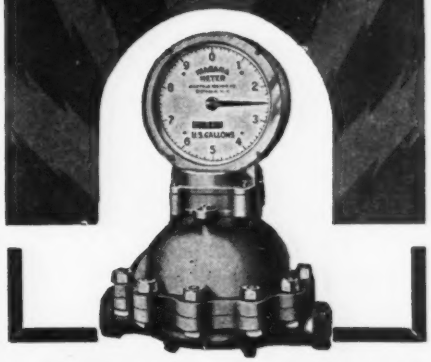
District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

DEPENDABILITY

The Niagara meter never forgets—never jots down wrong totals—never delivers uncounted gallons of gasoline or oil that cut into profits. If the Niagara registers 50, fifty gallons have gone through—if 50,000, fifty thousand gallons have been delivered, and recorded so they'll be paid for. It is accurate.

The Niagara installed today is installed for years from now—its dependability is permanent. It is "rugged" structurally and simple mechanically. Send today for the new catalog of these familiar meters.

BUFFALO METER COMPANY
2889 Main Street
Buffalo, N. Y.



All-in-One-Folio

Your Name in Gold FREE

$25.00

Folio opens out to full Display

361—This Folio is substantially made from heavy, smooth, 5-oz. black cowhide. No flaps—Solid ends. Opens out for full display. Contains eighteen 4-oz. bottles with metal capped corks. Bottles partitioned separately. Case also contains six 1-oz. squat grease jars. Plenty of room for literature and order blanks.

Less 10% for Cash
Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage
614 Delaware, KANSAS CITY, MO.

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Dec. 21 Sales	First	High	Low	Last	Change
43⅞	27⅛	42⅜	17½	(sh) 922,075	N.P.	Amerada Corp	50cQ	Oct. 31, 29	18,400	21	21	18	18⅞	— 3⅛
85	51¾	64¾	12½	(sh) 209,180	N.P.	American Republics Corp	....	.....	16,700	27⅜	27¾	21¾	22½	— 5⅜
53⅜	37½	47¼	35	$56,000,000	$25	Associated Oil	50cQ	Sept. 30, 29	.....	.....	.....	.....	.....	.....
62½	50	77⅞	30	50,000,000	25	Atlantic Refining	‡25cQ	Dec. 16, 29	39,000	40½	40⅞	36¼	37⅛	— 2⅜
53	20	49⅛	20	47,261,125	25	Barnsdall Corp. A	50cQ	Nov. 7, 29	29,000	25⅞	26¼	22½	23	— 3
51¼	20	49	38⅛	300,525	25	do B	50cQ	Nov. 7, 29	.....	.....	.....	.....	.....	.....
24½	12¼	32⅞	13¼	(sh) 956,075	N.P.	Beacon Oil	....	.....	8,900	16½	16½	†13¼	13½	— 3¼
36	25¼	34½	25	$51,524,150	$25	California Petroleum	....	Jan. 1, 29	.....	.....	.....	.....	.....	.....
.....	.....	37¾	18	(sh) 4,634,163	N.P.	Continental Oil (Delaware)	....	.....	60,700	26¼	26½	21½	33	— 4½
94⅜	68	94¾	42¼	21,031,400	100	General Asphalt	$1Q	Dec. 16, 29	8,900	51½	53	45⅞	48½	— 2⅞
141	110⅜	138	103½	6,628,200	100	do pfd	$1.25Q	Dec. 2, 29	.....	.....	.....	.....	.....	.....
67	79	109	23	25,000,000	100	Houston Oil	.....	.....	36,100	58½	62¼	49⅛	53	— 5½
38⅜	21¾	39¼	17¾	(sh) 1,333,157	N.P.	Independent Oil & Gas	50cQ	Oct. 31, 29	16,200	23⅞	24	20½	21⅞	— 2
39⅜	9	53	13	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	35,200	20¼	21½	16⅜	18½	— 2¼
37¼	8½	51¼	11½	4,550,110	10	do ctfs	.....	.....	22,100	18¾	18¼	15	16	— 2⅜
185	140	165	160	1,977,700	100	do pfd. new	$1.75Q	Oct. 1, 29	.....	.....	.....	.....	.....	.....
39⅛	27⅜	38⅜	16½	3,992,387	N.P.	Lago Oil & Transport	....	May 2, 27	6,900	21	25	20	24	+ 3
119¾	93⅜	18	7	(sh) 1,187,298	N.P.	Louisiana Oil Refining	.....	.....	19,300	9	9¼	8½	8⅝	— ⅜
96	78	100¼	80	$4,000,000	$100	do pfd	$1.62½	Nov. 15, 29	20	81	82	81	82	+ 2
25½	12½	18½	7½	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	1,600	7	8¼	6	6⅛	— 1⅜
360	250	295	176	$45,942,800	$100	Mexican Petroleum	$3Q	Oct. 20, 29	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Oct. 20, 29	.....	.....	.....	.....	.....	.....
73	4⅝	69⅜	9¼	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15, 24	66,200	20¼	21⅜	16⅜	17	— 3¼
44½	25⅛	39⅞	22⅛	(sh) 1,857,461	N.P.	Mid-Continent	50cQ	Nov. 15, 29	33,800	27¾	27¾	25¼	26¾	— 1¼
120½	103¼	121	120¼	$6,718,000	$100	do pfd	$1.75Q	Sept. 1, 29	.....	.....	.....	.....	.....	.....
7⅜	2⅜	5⅛	¾	23,849,720	10	Middle States	....	July 1, 23	.....	.....	.....	.....	.....	.....
5⅞	1½	3⅜	⅞	5,950,500	10	do ctfs	....	.....	11,800	1⅛	1⅛	1	1	— ⅛
2¼	1	1½	⅝	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	5,100	1	1⅛	1	1	0
55½	38¼	69	40¼	$50,000,000	$50	Pan American P. & T	....	Oct. 20, 27	3,100	59	59	56	56	— 4
58⅜	37⅜	69¼	40½	121,101,400	50	do B	....	Oct. 20, 27	600	59	60⅛	56	56	— 2
28⅜	15½	17½	13½	(sh) 400,000	N.P.	Pan. American Western B	....	Jan. 30, 27	.....	.....	.....	.....	.....	.....
21¾	11½	15¼	3	(sh) 199,370	N.P.	Panhandle P. & R	....	.....	100	5	5	5	5	— ¼
106¼	70	76	47½	$2,935,200	$100	do pfd	....	July 2, 23	600	50⅛	50⅛	50	50	0
53⅞	35¼	47	24¼	(sh) 2,406,803	N.P.	Phillips Petroleum	37½cQ	Oct. 1, 29	26,600	36½	37	31½	33½	— 3
5¼	½	3⅜	1	$29,622,925	$25	Pierce Oil Corp	....	.....	2,800	1⅛	1⅞	1	1⅛	0
50	16¼	51½	20	15,000,000	100	do pfd	....	Feb. 1, 22	1,600	24	24	21	21½	— 2½
6⅝	3½	5⅞	½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	16,300	2¾	2¾	2⅜	2½	— ¼
64⅝	59½	65⅝	40½	$60,636,450	$25	Prairie Oil & Gas	‡50cQ	Sept. 30, 29	14,100	54¾	55¼	52	52	— 2¾
.....	.....	65	45	101,250,000	25	Prairie Pipe Line	‡76cQ	Sept. 30, 29	5,600	58½	58⅞	56½	56¾	— 1¾
29⅞	16	25⅞	4	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	1,300	9	10	8½	9	— 1
49⅝	41	46¾	25½	2,845,350	50	do pfd	.....	May 1, 25	90	32	32	30	32	— ¾
31¼	19	30¾	20	75,959,255	25	Pure Oil Co	37½cQ	Dec. 16, 29	21,100	24	24½	22⅝	22¾	— ¾
119	108	116	108	13,000,000	100	do 8% pfd	$2Q	Oct. 1, 29	140	114	114	112½	112¾	— 1
56	23½	49⅝	20	47,127,725	25	Richfield Oil	50cQ	Nov. 15, 29	36,800	29	29	22⅝	24⅜	— 4⅝
.....	.....	42½	15	(sh) 1,200,000	N.P.	Rio Grande Oil Co	‡$1S.A.	July 25, 29	15,400	20⅞	20⅞	18½	18¾	— 1⅜
64	44⅝	64	43⅛	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.873	Aug. 10, 29	34,800	52½	53⅞	50⅜	51¾	— ⅜
57½	39⅜	55¾	43	(sh) 65,203,000	£2	Shell Transport & T	$1.447	July 23, 29	180	45	45	45	45	— ¾
39⅜	23¼	31⅜	19	12,254,979	N.P.	Shell Union Oil	35cQ	Sept. 30, 29	15,800	23½	23½	22¼	22½	— ⅞
27¼	18⅛	40⅜	15	$8,357,280	$10	Simms Petroleum	40cQ	Dec. 14, 29	5,100	27½	28	23⅛	23½	— 1⅞
46¾	17⅜	45	21	5,494,095	N.P.	Sinclair Consolidated	‡50cQ	Oct. 15, 29	125,700	25⅞	26¼	22⅜	23⅜	— 2⅜
110	102½	111	103	$16,025,200	$100	do pfd	$2Q	Nov. 15, 29	200	109⅜	109⅜	109½	109½	0
42⅝	25	46½	28	27,396,590	25	Skelly Oil Co	50cQ	Dec. 16, 29	5,500	33	33	30⅛	30¾	— 2½
80	53	81⅞	51½	(sh) 13,016,435	N.P.	S. O. California	‡62½cQ	Dec. 16, 29	25,300	62⅝	63	59⅞	59⅞	— 2¾
59¾	37¾	83	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Dec. 16, 29	210,200	65⅞	66¾	59½	62⅜	— 4
45½	28¾	48⅛	31¾	434,094,575	25	S. O. New York	40cQ	Dec. 16, 29	85,300	34¾	34⅞	32	32⅞	— 1⅝
77	31½	84⅜	55	(sh) 1,297,847	N.P.	Sun Oil	‡25cQ	Dec. 16, 29	2,100	60	60	†55	55	— 4⅜
110	110	105½	100	$5,000,000	$100	do pfd	$1.50Q	Dec. 2, 29	50	102½	104⅞	102½	104⅞	+ 1⅜
14¼	2½	24	5¼	(sh) 1,304,698	N.P.	Superior Oil Corp	....	Dec. 20, 20	27,400	8¼	8¾	6¼	6½	— 1⅜
74¾	50	71⅞	50	$211,082,925	$25	The Texas Corp	75cQ	Oct. 1, 29	36,700	57	57	54⅝	55⅛	— 1⅜
26⅝	12⅛	23⅞	9½	8,380,340	10	Texas Pacific Coal & Oil	2½%s	Sept. 30, 29	7,700	11⅛	11⅞	10⅛	10½	— 1¼
41½	19⅝	40	14	(sh) 2,179,275	N.P.	Tide Water Oil Co	20cQ	Sept. 30, 29	200	20¾	21¾	20¾	21¾	— ⅜
100⅛	86¾	97½	85⅛	$20,321,000	$100	do 5½% pfd	$1.25Q	Nov. 15, 29	200	88¾	88¾	88	88	— ½
25	14¾	23½	10	(sh) 4,877,976	N.P.	Tide Water Associated	.....	Aug. 1, 27	48,000	13	13	12	12	— ⅜
91¾	81⅞	90⅞	74⅛	$72,989,200	$100	do pfd	$1.50Q	Oct. 1, 29	1,000	81¼	81⅞	81⅜	81⅛	— 1⅞
14½	6¾	15¼	5⅛	(sh) 3,842,029	N.P.	Transcontinental Oil	.....	.....	86,400	8¾	9⅛	8	8½	— ⅛
58	42¾	54½	42⅛	$40,858,375	$25	Union Oil of California	‡50cQ	Nov. 9, 29	4,200	45⅞	46½	43⅛	44	— 2¼
128⅛	110	163¾	121⅞	31,101,200	100	Union Tank Car Co	$1.25Q	Dec. 2, 29	500	...	143	141¾	141¾	— 2¼
44⅞	26	42⅞	15	(sh) 488,359	N.P.	Warner Quinlan	50cQ	Oct. 1, 29	15,400	22⅜	22⅜	19½	20½	— 2
38	20⅛	38	25	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Oct. 21, 29	1,100	28	28	36½	25½	— 1½
22⅛	17¼	29¾	12⅞	(sh) 428,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	500	15¼	15¼	15	15	— ⅜

•New High †New Low xEx-Dividends ‡Also Extras s-Stock Total Sales 1,321,680

Pittsburgh Stock Exchange

Transactions Week Ended Dec. 20, 1929

	Sales	High	Low	Last	Change
Ark. Nat Gas (new)	1,625	10¼	8½	8⅝	—2⅛
do pfd	180	8⅛	8⅛	8⅛	— ⅛
Devonian Oil	270	12	11½	12	+ ⅞
Lone Star pfd	125	104¾	104½	104½	— ½
Lone Star Gas	3,799	36½	34	34	—2
Plymouth Oil	865	28	27	27	— ½
Pittsburgh Oil & Gas	1,000	3	3	3	0
Salt Creek Cons.	2,300	2⅜	†2	2	— ⅜
Shamrock O. & G.	4,710	19	15½	18	+2⅛

xEx dividend. †New low.

Pittsburgh Curb Market

Transactions Week Ended Dec. 20, 1929

	Sales	High	Low	Last	Change
Ark. Gas "A"	1,825	9¾	8⅛	8⅛	—2⅛
Leonard Oil & Dev.	1,000	2	2	2	....
Phoenix Oil	600	.35	.35	.35	....

Shreveport-El Dorado Pipe Line Co.—Dividend for last quarter of 1929 has been omitted. The company had been paying 50 cents a share.

Financial Notes

Washington Oil Co.—Annual dividend rate has been increased from $3 a year to $4 a year.

Texas Pacific Coal & Oil Co.—22,695 additional $10 capital stock listed on New York Stock Exchange.

Standard Oil Co. of Indiana—Ownership of a large percentage of the stock of the Pan American Petroleum & Transport Co. has been obtained by the Standard, it was announced to stockholders in letters that accompanied the current dividend checks. Just what the percentage is, was not announced. The Standard's dividend payment amounted to approximately $14,400,000.

Hancock Oil Co.—Net profits of this company in the quarter ended Nov. 30 amounted to $155,108 after all reserves including an allowance for federal income taxes. This sum was equivalent to 72 cents a share on the outstanding 215,427 shares of capital stock.

White Star Refining Co.—Earnings for 1929 are reported to be around $9 a share for 1929 after all charges and reserves. White Star is the second largest distributor of gasoline in Michigan.

Oil Dividends

	Amount	Payable	Stock of Record
Cities Service m	2½c	Feb. 1	Jan. 15
do stock m	½%	Feb. 1	Jan. 15
do pfd. m	50c	Feb. 1	Jan. 15
do pfd. BB m	50c	Feb. 1	Jan. 15
do pfd. B m	5c	Feb. 1	Jan. 15
Independent Oil & Gas q	50c	Jan. 31	Jan. 15
Louisiana Oil pfd. q	$1.62½	Feb. 15	Feb. 1
Mountain & Gulf q	2c	Jan. 15	Dec. 31
Pierce Pet. pfd. s a	$3	Jan. 2	Dec. 26
Washington Oil q	$1	Dec. 20	Dec. 16

Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Dec. 21 Sales	First	High	Low	Last	Change
22⅜	14⅞	18¾	14¼	£4,126,460	£ 1	Anglo-American Oil	36c	June 5, 29	.....	.....	.....	.....	.....	.....
21¼	15	18	13	.....	....	do certificates	36c	June 5, 29	42,600	16¾	17⅛	16⅜	16⅞	+ ⅛
20½	14⅜	17	11	.....	£ 1	do ctfs. non-voting	36c	June 5, 29	6,400	16⅝	17	16⅝	16⅞	+ ⅛
5	1¼	2½	.75	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	200	1	1	1	1	0
9¾	3¼	4⅜	1	$10,000,000	$50	do pfd	.....	.....	1,600	1¼	1⅜	1⅛	1⅜	0
56	44½	46½	25	$1,000,000	25	Borne-Scrymser	$1 S.A.	Oct. 15, 29	.....	.....	.....	.....	.....	.....
76	58	74¼	55	10,000,000	50	Buckeye Pipe Line	‡$1Q	Dec. 14, 29	800	69¼	69¼	68	68	— 1
161	117¼	210	130	3,000,000	25	Chesebrough Mfg	‡$1Q	Sept. 30, 29	100	145	145	145	145	— 5
23	16	29	8⅛	36,123,350	10	Continental Oil	.....	Dec. 15, 27	.....	.....	.....	.....	.....	.....
17½	9½	11¾	5⅝	.....	N.P.	Creole Petroleum	.....	.....	8,800	6⅝	6¾	6½	6½	— ⅛
82	67	95	40	1,500,000	50	Cumberland Pipe Line	$1Q	Dec. 16, 29	50	49	49	40	41	—11¾
88	64⅛	70½	42	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 29	.....	.....	.....	.....	.....	.....
13	4¼	7	3⅜	16,000,000	100	Galena Signal Oil	.....	June 30, 25	.....	.....	.....	.....	.....	.....
86	26	90	73½	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
89¾	35	88	73½	2,000,000	100	do old pfd	.....	June 30, 26	120	75	85	75	85	+ 6
114¾	59¼	128	74⅛	73,685,700	25	Humble Oil & Refining	‡30cQ	Oct. 1, 29	16,800	86	88⅛	82⅛	84	— 5⅛
290½	176½	340½	260	20,000,000	100	Illinois Pipe Line	$10S.A.	Dec. 16, 29	3,850	300¼	310	300	310	+10
104	56⅜	41	22	(sh) 26,421,768	N.P.	Imperial of Canada	12½cQ	Dec. 2, 29	6,400	28	28	25	25½	— 1¾
91⅞	74⅝	41⅞	26	$1,000,000	$10	Indiana Pipe Line	‡50cQ	Nov. 15, 29	11,800	41½	41½	40	40	— ½
55	35	29⅜	15	(sh) 14,247,088	N.P.	International Petroleum	12½c	June 25, 29	8,400	22½	22½	19⅞	20⅝	— 1⅞
32⅜	19⅜	25⅞	10½	$6,363,350	12.50	National Transit Co	25cQ	Sept. 16, 29	12,700	22½	22⅝	20⅞	21½	— 1⅜
75	38½	85	72	1,000,000	10	New York Transit	40c	Oct. 15, 29	.....	.....	.....	.....	.....	.....
...	...	...	...	.....	....	do new	.....	.....	100	15	15	15	15	— 2¼
69	56½	63	41	2,000,000	50	Northern Pipe Line	$2 S.A.	July 1, 29	100	50½	51	50	51	— 1¼
83½	58¾	79⅞	64⅛	60,000,000	25	Ohio Oil Co	‡50cQ	Dec. 14, 29	100	71⅞	71⅞	70⅝	70¾	— ⅝
84	28	44½	20	10,000,000	25	Penn Mex. Fuel	$1	Dec. 14, 29	.....	.....	.....	.....	.....	.....
220	167	50	29	4,000,000	25	Solar Refining	$1.25S.A.	Dec. 20, 29	300	34½	34½	†29	29	— 5
19	12	23½	13	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 29	200	14½	14½	14	14	+ ⅜
71⅞	36¾	60¼	35⅛	30,000,000	25	South Penn Oil	50cQ	Sept. 30, 29	11,900	41¾	41⅞	40	40	— ⅜
102	70	70	45	1,750,000	50	South West Pa. Pipe Lines	$1	Oct. 1, 29	.....	.....	.....	.....	.....	.....
95⅞	70⅞	63	45	348,175,069	25	S. O. Indiana	‡62½cQ	Dec. 16, 29	38,200	54½	54⅞	52½	52⅞	— 1⅞
27¾	15	33¾	18	8,000,000	25	S. O. Kansas	‡50cQ	Dec. 16, 29	3,800	26	27	25⅝	26½	+ 1½
49	44	46⅜	29	25,654,516	10	S. O. Kentucky	40cQ	Sept. 30, 29	6,100	35¾	35¾	32	33	— 2⅛
54⅝	39⅞	50¼	40	4,649,225	25	S. O. Nebraska	‡62½cQ	Dec. 20, 29	100	43	43	43	43	— ⅝
134	71	129	60	14,000,000	25	S. O. Ohio	62½cQ	Oct. 1, 29	1,650	85	85	79⅜	82⅛	— 3¾
125	116	125½	106	7,000,000	100	do pfd	$1.75Q	Dec. 2, 29	30	117¾	*125½	†106	115	—10
23½	16	18	5⅛	861,466	25	Swan Finch	30c	Jan. 15, 29	300	5⅛	8⅛	†5⅛	8⅛	— 1⅞
111	72	133¾	75	126,154,000	25	Vacuum Oil	‡$1Q	Dec. 20, 29	4,600	100	100	94⅞	94⅞	— 5⅛

*New High †New Low ‡Also Extras

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Week Ended Dec. 21 Sales	First	High	Low	Last	Change
1½	.53	.72	.125	$5	Amer. Cons. Oilfields	200	1/16	1/16	1/16	1/16	— 1/16
9½	3⅛	8⅝	1⅛	N.P.	Amer. Maracaibo	3,100	1¾	1¾	1½	1½	— ¼
4½	2¼	4¾	1	$10	Argo Oil	200	1⅜	1⅜	†1	1	— ¼
3¾	3⅜	26	3¾	N.P.	Arkansas Nat. Gas	11,500	10⅜	10⅛	8½	8¾	— 1⅛
....	....	24¾	6½	N.P.	do A	25,400	10	10⅜	7⅞	8½	— 1⅝
....	....	9	4	10	do pfd	1,600	8	8	7⅞	7⅞	— ¼
55	32¾	70	50	N.P.	British American Oil	.....	.....	.....	.....	.....	.....
23⅞	3¾	4⅞	1	25c	Carib Syndicate	1,200	1⅛	1⅛	1	1	— ⅛
....	....	68⅛	20	N.P.	Cities Service new	202,000	28¾	28⅞	22⅞	24⅝	— 4¼
103½	94½	99¼	84	100	do pfd	1,200	89¼	89½	88⅞	88⅞	— ⅝
9⅜	8⅞	9¼	8	10	do pref. B	300	8¼	8¼	8¼	8¼	— ¼
97	88½	96	81	100	do pref. BB	200	93¼	93¼	93⅛	93⅛	+ 2⅛
2¼	1	1½	¼	1	Colombia Syndicate	13,800	1/16	1/16	¼	1/16	0
17¾	9¾	15	3⅞	N.P.	Colon Oil	8,400	5⅝	5¾	5	5⅛	— ½
8⅞	6¼	11⅜	2½	10	Consolidated Royal	9,800	4¼	4¾	4¼	4½	0
....	....	135	42	N.P.	Cosden Oil Co	.....	.....	.....	.....	.....	.....
....	....	82	55	....	do pfd	.....	.....	.....	.....	.....	.....
3¼	.76	2½	¼	N.P.	Crown Central	8,800	½	½	†¼	¼	— ¼
15	6¾	11¾	4	N.P.	Crystal Oil	.....	.....	.....	.....	.....	.....
50	48	51⅛	51⅛	$100	do pfd	.....	.....	.....	.....	.....	.....
33⅛	8⅛	26	6½	N.P.	Darby Petroleum	9,400	9¼	9½	8⅞	8⅞	— ⅛
2⅞	1	11	2	N.P.	Derby Oil & Refining	1,100	5	5¼	4¾	4¾	+ ⅛
*21⅛	7½	44	5	N.P.	do pfd	.....	.....	.....	.....	.....	.....
165	101⅛	209	115	$25	Gulf Oil Corp	6,900	143	143	131⅝	133	0
7½	5⅜	7½	1⅛	5	Homaokla Oil	100	3½	3½	3½	3½	— ¼
....	....	49¼	5	$1	Indian Territory	12,900	22⅛	22⅞	18	18⅜	— 4¼
3⅜	1	2⅞	⅜	10	Intercontinental Pet	9,800	1⅛	1⅛	3/4	7/8	— 3/8
3	¼	3⅝	1¼	N.P.	Kirby Petroleum	1,300	1⅞	1⅞	1¾	1¾	0
9⅜	5⅛	6⅛	1	N.P.	Leonard Oil & Dev	2,800	2	2	†1	1½	— ½
43⅜	20	38⅞	18	N.P.	Lion Oil & Refg	1,900	20¼	20¼	19⅛	19⅛	— 1⅞
....	....	67⅞	28	N.P.	Lone Star Gas	4,100	36⅛	36¼	33	33	— 3
1⅞	.50	1¼	¼	1	Magdalena Syndicate	3,900	1/16	1/16	¼	1/16	0
48½	32	38½	15	N.P.	Margay Oil	.....	.....	.....	.....	.....	.....
8	2¾	6⅜	2½	N.P.	Mexico-Ohio Oil	.....	.....	.....	.....	.....	.....
....	....	42	8	N.P.	Missouri-Kan. P. L	7,900	19⅝	19⅞	18¾	19¼	— ¼
1¾	.76	1½	¼	1	Mountain & Gulf	900	5/8	3/4	5/8	3/4	+ 1/8
28⅞	19¼	22⅞	7	10	Mountain Producers	7,900	9⅜	9⅝	8	8⅛	— 1
....	....	43⅞	24	N.P.	Nat. Fuel Gas (new)	3,900	26⅜	26⅝	25	25	— 1¾
5⅜	4¼	5	2¼	5	New Bradford	600	2⅞	3	2⅝	2⅞	— ⅛
5½	3	3⅞	2¾	10	New England Fuel	.....	.....	.....	.....	.....	.....
11⅞	7⅛	9⅜	2¼	1	New Mex. & Ariz	500	3½	3¾	3¼	3½	+ ⅜
15½	11½	24½	11⅛	25	New York Petrol	200	15½	16⅜	15	15¼	— 1⅛
13¼	8⅛	18½	6⅛	N.P.	North Cent. Texas	200	9	9	8¾	8¾	— ¼
....	....	19¼	8⅛	N.P.	Oil Stock, Ltd. A	300	9¾	9¾	9⅜	9½	— ½
....	....	18¼	10	N.P.	do B	.....	.....	.....	.....	.....	.....
26¼	20	26⅝	12⅝	N.P.	Pacific Western Oil	800	15	15	13⅛	13¼	— 1⅞
6	2¼	3½	½	N.P.	Pandem Oil	1,700	1/8	3/4	1/8	1/8	— 1/8
15⅝	8½	10½	2⅜	N.P.	Pantepec Oil	900	3	3⅛	2⅞	3	— ⅛
20	10⅜	25½	22½	$25	Paragon Refg. B. ctfs.	.....	.....	.....	.....	.....	.....
....	....	34½	17	N.P.	Petroleum Corp	9,500	21⅞	21⅞	20	20¼	— 1¾
31⅜	26½	37	22	N.P.	Plymouth Oil	200	27½	27½	27	27	— ⅝
18	8	16	9½	25	Red Bank Oil	100	9½	9½	†9½	9½	— ⅛
13	4⅛	8½	1⅛	N.P.	Reiter-Foster	1,400	3	3⅛	2½	2½	— ½
31½	23¼	25½	19	$25	Richfield pfd	500	23	23	22	22	— 1
....	....	29	13	....	Root Refining pfd	100	13	17	†13	17	0
12	4⅝	11	3	N.P.	Ryan Consolidated	.....	.....	.....	.....	.....	.....
7¼	5½	5⅞	1⅞	$10	Salt Creek Cons	500	2⅛	2⅛	1⅞	2	— ¼
35	23¼	25⅞	9	10	Salt Creek Prod	2,200	11⅜	11¾	9¾	10	— 1⅜
3½	1	2½	⅛	5	Savoy Oil	1,000	1¼	1¼	1¼	1¼	0
40	27	33⅛	10	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
....	....	24	11⅛	N.P.	Southland Royalty	2,800	12½	12½	11¾	11¾	— 1⅛
....	....	12	4	N.P.	Sunray Oil	1,200	7⅜	7⅜	6⅝	6⅝	— ¾
....	....	23	7½	N.P.	Texon Oil & Land new	4,200	10	10	9⅛	10	0
22⅞	13	16⅞	11⅜	$10	Tidal Osage	.....	.....	.....	.....	.....	.....
21¼	13⅛	16½	10⅛	10	do not-voting	.....	.....	.....	.....	.....	.....
93¾	75	155	80	100	Transcontinental pfd	.....	.....	.....	.....	.....	.....
74¼	18	81⅛	66	10	Venezuela-Mexico	200	77½	77½	77½	77½	0
9⅛	4¾	6½	1⅛	3	Venezuelan Petrol	8,100	2½	2¾	2¼	2½	+ ¼
....	....	72¼	66	N.P.	White Star Oil	.....	.....	.....	.....	.....	.....
8¼	4⅞	9⅛	2	1	Woodley Petroleum	400	3⅛	3⅛	2¾	2¾	— ½
⅜	⅛	5⅜	½	25	Y Oil & Gas	.....	.....	.....	.....	.....	.....

*New High †New Low

New York Bonds

Week Ending Dec. 20

	High	Low	Last	Change
Asso. Oil Gold 6s	102	102	102	0
Atlantic Refg. deb. 5s	101¾	101	101	0
Cal. Pet. 5s	95	94	95	+ ⅞
Cal. Pet. 5½s	98⅛	98	98½	+ ½
General Pet. 5s	101⅝	101	101	—1
Humble Oil & Refg. 5s	100⅞	100⅛	100¾	+ ¾
Humble Oil & Ref. 5½s	101¾	101¼	101⅝	0
Pan. Amer. P & T 6s	104⅝	103⅛	104	+ ⅞
Pan Amer. P & T 6s	97	95½	97	+2
Phillips Pet. 5¼s	93	91¾	92¼	0
Pierce Oil deb. 8s	103	103	103	0
Pure Oil 5½s	100⅛	99¾	100	0
Richfield Oil of Calif. 6s	98⅞	97	97	—2
Shell Union Oil 5s	52	49⅞	50	—2
Sinclair Con. Oil 7s	102	101	101	— ¼
Sinclair Con. Oil 6½	100½	99⅞	99⅞	— ¼
Sinclair Con. Oil 6s D	100	99⅞	100	+ ⅛
Sinclair Con. Crude 5½s	97¼	96⅜	96⅜	— ¼
Sinclair Pipeline	94⅞	94⅝	94⅝	— ⅛
Skelly Oil 5½s	94¼	93½	93½	— ½
S. O. N. J. 5½s	103½	102½	102½	— ¼
S. O. N. Y. 4½s	97½	96¼	97	0
Union Oil of Calif. 6s A	106¾	106	106¾	+ ¼
Union Oil of Calif. 5s C	99	98⅛	99	+1
Warner-Quinlan 6s	88	87	87	—1
White eagle Oil 5½s	101	100	100½	+ ½

New York Curb Bonds

Week Ending Dec. 20

	High	Low	Last	Change
Beacon Oil 6s '36	105	105	105	0
Cities Service 5s '66	84½	83¾	84½	+ ⅛
Cities Service G. 5½s '42	86	84¾	84¾	—2
Cities Service G. P. 6s '43	94	91¼	91¼	—1¼
Cities Service G.P. 5½s '52	88	86½	86½	—1¼
Cont. Oil 5¼s '37	93¾	92⅞	93¾	+1
Empire O & R 5½s '42	86	84¾	85	—1
Gulf Oil 5s '37	100¼	99⅛	99⅛	— ⅞
Gulf Oil 5s '47	101¼	100¼	101	— ⅛
Independent Oil 6s '39	102¾	102	102½	— ¼
Shell Union Oil 5s '49	98¾	97⅝	97¾	— ¾
Sun Oil 6½s '39	101	100½	100½	— ⅝
Valvoline Oil 7s '37	103¼	103¼	103¼	+ ¼

Cleveland Stock Market

Dec. 20	Par Value	Bid	Asked
Canfield Oil Co	$100	100	135
do pfd	100	102	...
Fred G. Clark, Inc	10	11	11¼
National Refining Co	25	34	35½
do pfd	100	132	...
Paragon Refining Co	25	9⅞	10¼
do pfd	N.P.	34¼	41
do ctfs	...	..	10½

THE OIL INDUSTRY EXCHANGE

Positions Wanted

SALESMANAGER—Thoroughly capable mechanical engineer and oil man who can produce results, at present employed, wants to get with large progressive oil company as manager or assistant manager of railroad and / or marine sales. Address Box 461.

EXECUTIVE—Familiar with marketing operation of bulk and service stations, training of salesmen, etc. 39 years of age, nineteen years experience with two major companies. Has outstanding ability, mature judgment, commanding personality. A-1 reference from former employes. Desires connection January 1st. Address Box 465.

EXPERIENCED LUBRICATING SALESMAN AND COMPOUNDER WITH PROVEN FORMULAS FOR RAILWAY AND OTHER HIGH GRADE LUBRICANTS, SEEKS CONNECTION WITH RELIABLE OIL COMPANY. ADDRESS RAILWAY LUBRICATION, 320 Mercantile Bank Bldg., Dallas, Texas.

Situations Open

SALESMAN WITH EXECUTIVE ABILITY, twelve years experience marketing high grade petroleum products, as well as supervising and managing filling stations and bulk plants, desires connection with opportunity to produce results. Thirty-eight years of age, married. Best references. Address Box 460.

For Sale

FOR SALE

Sweetland Filters, Nos. 1, 2, 7, 9, 10. Eight 2" belt and motor driven Kinney jacketed Rotary Pumps. One 3" Duplex Kinney jacketed Rotary Pump, engine driven. Tanks, pumps, etc. Send for complete lists.

Stein-Brill Corporation,
25 Church St., New York City

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"Position Wanted"—5 cents a word. Minimum charge $1.00.

Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

O. B. Ward

Who, after an absence of a year, returns to the Battenfeld Grease & Oil Co., Kansas City, Mo. Mr. Ward was formerly with that company for seven years and is well known among oil jobbers

Former Oil Marketer Dies In Plane Fall

TULSA, Dec. 20.—T. J. Chastain, formerly president of the Chastain Oil Co. of Tulsa, retail distributors, and more recently head of a flying school at Bristow, was killed Dec. 15 when a plane fell near the Bristow airport.

Mr. Chastain came to Tulsa several years ago and organized the oil company. His company erected two modern stations, known as the "Blue Dome" stations. Several months ago he sold his company to the Tidal Refining Co. He had been an aviation enthusiast for some time and with his son opened a flying school at Bristow. He is survived by his widow, his son, and a daughter.

Sales Heads Promoted By Associated

CLEVELAND, Dec. 23.—J. H. Lewis has been promoted to the position of assistant domestic sales manager of the Associated Oil Co. following the recent advancement of B. I. Graves to general sales manager and P. E. Allen to manager of domestic sales.

Mr. Lewis joined the Associated as manager of white oil sales in 1924. Later he was made manager of the central division sales. The following additional changes are announced by the company:

W. A. Reanier, formerly northwest departmental sales manager at Seattle, has been transferred to San Francisco as sales manager in charge of the central department, which includes all territory from the Oregon line to the Tehachepi and east to Salt Lake City.

H. A. Jackson, formerly assistant departmental sales manager in Los Angeles, is appointed sales manager of the Washington department, with headquarters at Seattle, the former northwest region being split into an Oregon and a Washington department.

R. H. Cook has been appointed sales manager over the Oregon department, with headquarters at Portland, where he was formerly district manager.

Ford King, formerly manager of the Oakland district, has been transferred to the general office in San Francisco as assistant to B. I. Graves, general sales manager.

The following changes are made in district offices:

Walter Brunn, formerly departmental sales assistant in the central region, is appointed manager of the Oakland district, and L. J. Gibson, formerly district manager at Seattle, has been transferred to Los Angeles as district manager under F. S. Shoup, sales manager of the southern department.

The only petroleum product shipped by the United States to Greece the first half of 1929 was lubricating oil and grease, 14,600 barrels of which were exported of the total of 26,000 barrels imported by Greece in that period.

Assistant Sales Manager Of Wilcox Oil & Gas

TULSA, Dec. 20.—W. I. Williams Jr., formerly with the Mid-Continent Petroleum Corp., has joined the H. F. Wilcox Oil & Gas Co. as assistant to H. E. Bangert, general sales manager. He will relieve Mr. Bangert of some of the duties which have developed as a result of the company's rapid expansion in the refining and marketing branches of the industry.

Prior to his connection with the Mid-Continent corporation, Mr. Williams was with the Crystal Oil Refining Corp. at Shreveport. He received his early sales training in the Waite Phillips organization before that company was acquired by the Barnsdall Oil Corp. Mr. Williams is a native Tulsan, the son of W. I. Williams, of the law firm of Davidson & Williams, and is a brother of Judge B. J. Williams of the common pleas court.

Since the Wilcox company first started its retail marketing department about two years ago it has built or acquired more than 200 units in Oklahoma, Kansas, Missouri and Illinois, and is contemplating the acquisition of about 250 more within the next few months.